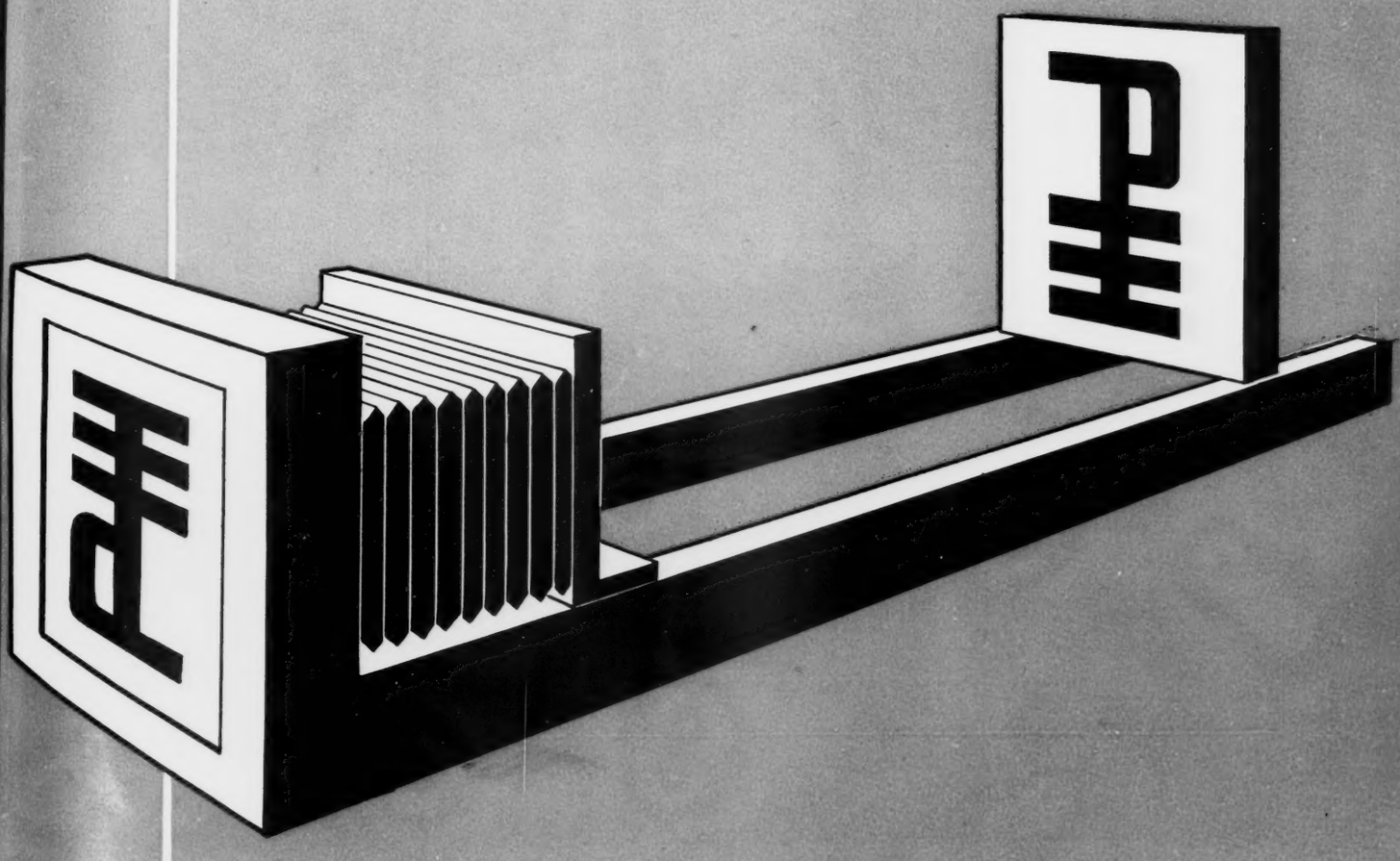
JANUARY 1951

PLEASE ROUTE THIS COPY TO	
Manager	Pressroom F'm'n
Production Mgr.	Bindery F'm'n
Plant Supt.	Mailing F'm'n
Platemaking F'm'n	Maintenance Supt.
Composing F'm'n	Purchasing Agt.
For filing, please return to	

PRINTING EQUIPMENT *Engineer*



AN INDUSTRY-WIDE TECHNICAL PUBLICATION

it's Magic

THE MAGIC OF CHEMISTRY AND YOU...

Do It Yourself!

The Linotape Dri-Stain Process is a magic and harmless chemical method that enables you to contrast your own mats in your own shop...and at times most convenient to you.

The face of your composing machine mats—and only the face—is Dri-Stained with a piece of Linotape...applied with uniform, regulated heat. The result is a long lasting, deep black stain. White, or color, inlay—to emphasize the mat reference markings—will then provide vivid contrast.

Time and labor savings will quickly offset all costs, whether you "do it yourself," or the work is performed by a Linotape authorized dealer or factory man.

The Linotape Dri-Stain Process is economical to buy and to use. A postcard will bring complete information, including costs.

No eye-strain—Less errors "get by."

LINOTAPE PRODUCTS COMPANY 1840 LARIMER STREET DENVER, COLORADO

Cut composing room costs with a Sta-Hi Form File!

STA-HI *Power Lift Form File*

- You can eliminate "traffic jams" of forms and trucks, speed up production, get more efficient composing room operation by using the STA-HI Power Lift Form File.
- One Form File unit provides quickly accessible "live filing" room for 16 full size newspaper page forms—**in a condensed floor space of only 7 square feet!**
- Forms are easily and quickly filed or removed in **one operation**—direct from truck to filing shelf, or from shelf to truck.
- Forms can be slid into the Form File to get them out of the way during the rush hour and then killed out later when time is available. Any form can be pulled out on its shelf at convenient truck-height, for corrections or makeover. Forms are instantly available for making stereotype page mat re-molds.
- All Form File operations are made at the easy, natural truck-height position—**no stooping or reaching is necessary.** One man does the job with ease.
- Join the many publishing plants that have found the Form File a space saver, time saver, money saver! Write today for full details.

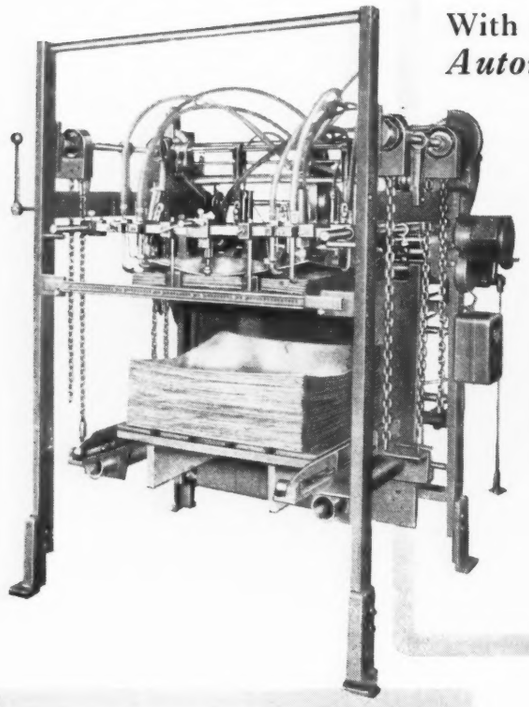
Sta-Hi Corporation

235 W. WASHINGTON BLVD.

BOX 152, WHITTIER, CALIF.

"SUPERIOR NEWSPAPER PRODUCTION MACHINERY"

Metal Decorators . . .



With the Dexter Reloading Metal Sheet Feeder
Automatic Feeding is Practical and Profitable

This Dexter automatically separates, picks up and advances metal sheets from pile to registering or feeding point of the press, slitter or other machine to which it is attached . . . at a speed of up to 85 sheets a minute.

Sheets may range between 38 gauge and 24 gauge; and in size from 36 x 44" down to approximately 14 x 18". Feeders for heavier gauges and much larger sizes are also available.

Continuous production is maintained by feeder reloading mechanism, which permits new loads to be placed in feeding position without stops for reloading.

Should two sheets stick together, a reject mechanism conveys them to reject tray, without stopping equipment. Rubber suction mouthpieces and rubber drop rollers guard sheets against scratching.

The Dexter Continuous Reloading Metal Sheet Feeder may be attached to

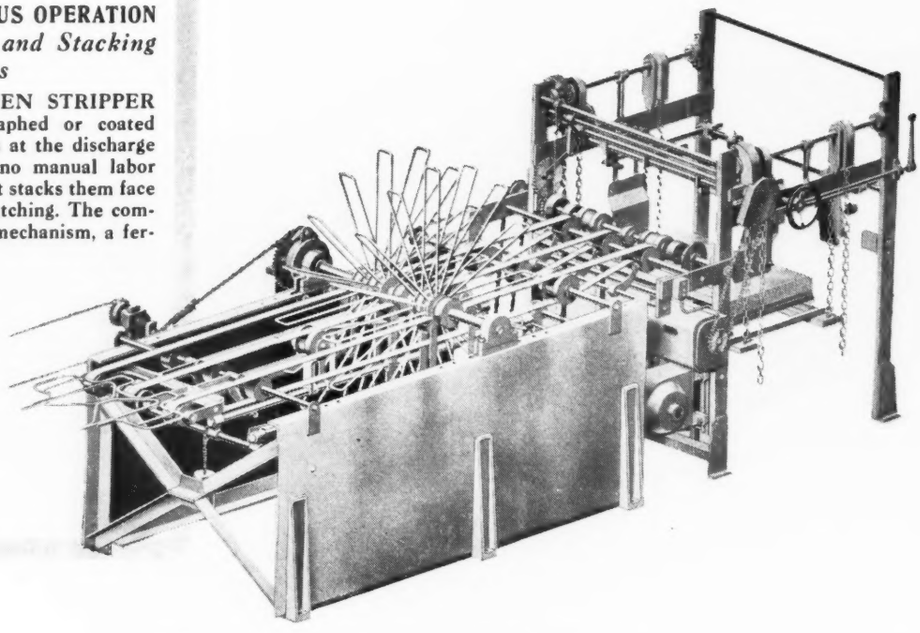
METAL LITHO. PRESSES
COATING & VARNISHING MACHINES
SORTING MACHINES
SHEARS & SLITTERS
PUNCH PRESSES
STOVE PIPE MACHINES
BUFFING MACHINES
SPRAYERS

. . . and many others

The list of representative concerns operating Dexter Metal Sheet Feeders reads like a cross section of "Who's Who" in American industry.

MODERNIZE THE LABORIOUS OPERATION
of Manually Removing and Stacking Metal Sheets

The DEXTER END OVEN STRIPPER automatically removes lithographed or coated ferrous sheets from the wickets at the discharge end of the drying oven, with no manual labor and a minimum of supervision. It stacks them face up in pile delivery without scratching. The complete unit includes a stripping mechanism, a ferris wheel type of turn-over device and a pile delivery. Standard units are built in three sizes: 36 x 36", 36 x 44" and 36 x 48". Special sizes up to 52 x 74" and larger can be manufactured. May we tell you how these machines can promote your production and reduce your costs, labor turnover and spoilage of sheet stock.



Dexter • Christensen • McCain

Modern Machines for Printers and Binders

DEXTER FOLDER COMPANY,

General Sales Offices, 330 West 42nd Street, NEW YORK 18, N. Y.

Branch Offices, Domestic and Foreign Agents

Pressmen Know

speed isn't everything

Harry C. Chalmers photo

Miller presses have speed, if you want it. But more important, they have dependable mechanical design which assures the pressman time and ease of mind to produce beautiful, fine registered, high quality work.

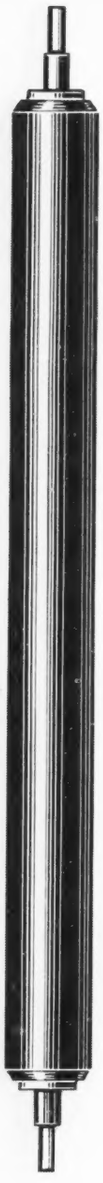
Miller adjustments are simple; operating levers are within easy reach; and there is a feeling of dependability which permits the pressman to take time checking inks and using the "tricks of the trade".

miller

MILLER PRINTING MACHINERY CO. Pittsburgh 12, Pa.

OVER ONE HUNDRED YEARS OF ROLLER MAKING

SAM'L BINGHAM'S SON MFG. CO.



Manufacturers of

RUBBER • NON-MELTABLE • FABRIC COVERED
ROTOGRAVURE • OFFSET
COMPOSITION • VARNISH-LACQUER • GRAINING

ROLLERS

WE ARE NOW MAKING
COMPOSITION ROLLERS
for
WINTER USE

SHIP YOUR OLD ROLLERS TO
THE FACTORY MOST CONVENIENT TO YOU

16 Modern Factories Serving Printers in 31 States

FACTORIES

ATLANTA 3
CHICAGO 5
CLEVELAND 14
DALLAS 1
DES MOINES 2
DETROIT 10
HOUSTON 6
INDIANAPOLIS 2

SAM'L BINGHAM'S SON MFG. CO.
MANUFACTURERS OF
PRINTERS' ROLLERS
LITHO-OFFSET ROLLERS

FACTORIES

KALAMAZOO 12
KANSAS CITY 6
MINNEAPOLIS 15
NASHVILLE 3
OKLAHOMA CITY 6
PITTSBURGH 3
ST. LOUIS 2
SPRINGFIELD, O.

Pacific Coast Sales Representative; THE CALIFORNIA INK CO., INC.

PRINTING EQUIPMENT *Engineer*

AN INDUSTRY-WIDE TECHNICAL PUBLICATION

Published especially for management, production and mechanical executives responsible for printing production and the specification of equipment and supplies used in the commercial, magazine, private plant and daily newspaper fields.

EDITORIAL STAFF

MacD. SINCLAIR, Editor

ADAM HENRY REISER
Associate Editor

EDWARD H. OWEN
Assistant Editor

BUSINESS STAFF

DON WILL, Publisher

William L. Osborn, Eastern Manager, 1712 Grand Central Terminal, New York 17, N. Y. Phone: MUrray Hill 6-5980.

Eugene A. Powers, Midwest Manager, 612 N. Michigan Ave., Chicago 11, Ill. Phone: SUperior 7-2444.

Charles A. Tallinger, jr., Central District Representative, 1276 West Third St., Cleveland 13, Ohio. Phone: CHerry 1-6645.

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Printed in U. S. A.

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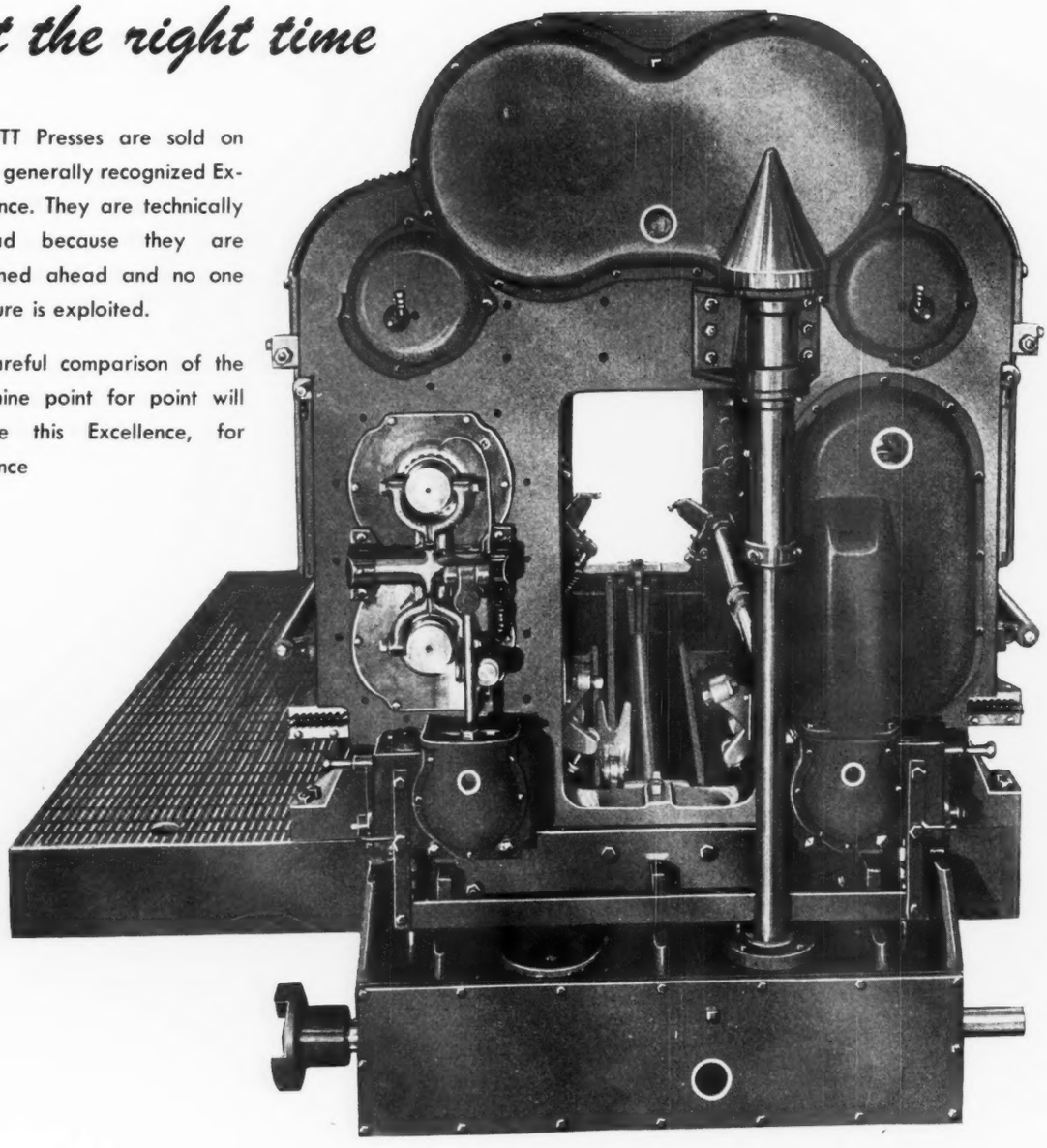
THE IMPORTANCE OF BUYING THE RIGHT EQUIPMENT

at the right time

SCOTT Presses are sold on their generally recognized Excellence. They are technically ahead because they are planned ahead and no one feature is exploited.

A careful comparison of the machine point for point will prove this Excellence, for instance



THE DRIVE SIDE OF THE UNIT

Note the large archway openings inside the Unit, permitting operator entrance from both sides for quick adjustment of rollers and sheet leads.

Make your own comparison and judge for yourself!

WALTER SCOTT & CO., INC.

PLAINFIELD, N. J.

Simplicity . . . the keynote of the Ludlow system of all-slug composition, for the Ludlow is quickly mastered by competent compositors, who will readily produce composition that is satisfactory for practically every requirement.

Efficiency . . . is another distinctive Ludlow quality, for the Ludlow method is direct—from copy to hot metal to form. No operations to "get ready to go" but immediate setting and casting of typeface matrices in sluglines, with practically all time charged to the job. Eliminating waste time means larger profits.

Ludlow System

Flexibility . . . is characteristic of Ludlow production, for it enables handling a wide variety of composition in many type sizes and styles, or centralization on a specialty product—with profit in either case. Whether commercial printing, advertising composition, publications, ruleforms, envelopes, labels or any other special item—it's all the same to the Ludlow

Economy . . . is another Ludlow feature, for all work is handled and concentrated within a compact area, resulting in greater production. The use of Ludlow conserves floor space, permitting better routing of all operations. Simplicity of Ludlow construction also makes for moderate upkeep expense.

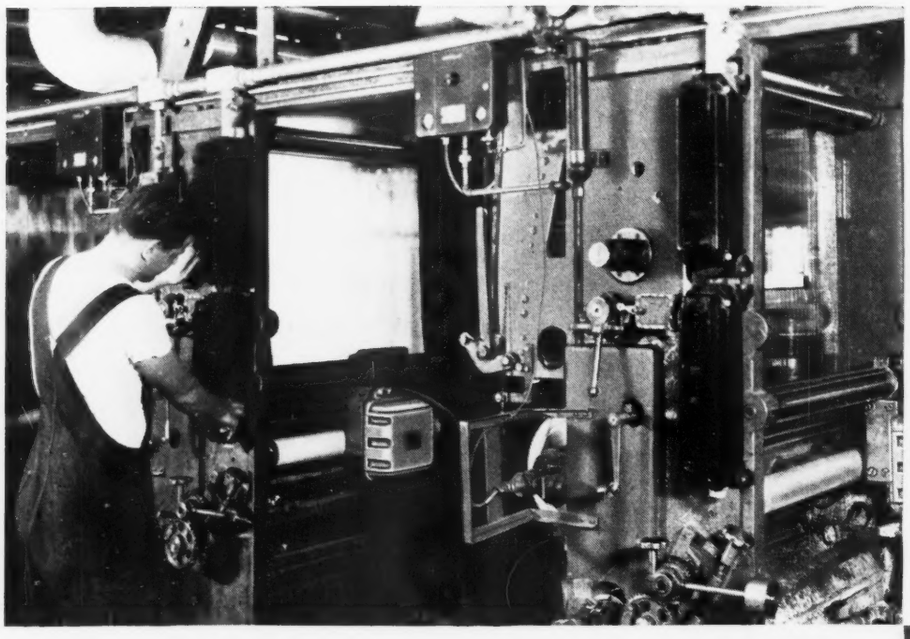
Dependability . . . is the experience of thousands of satisfied Ludlow users. With Ludlow on the job, not only do you have efficient composing room production, but you are able to take full advantage of pressroom and bindery capacity, and also to effect numerous profitable short-cuts all along the line.

The Elrod

Means a plentiful supply of leads, slugs, rule and base material
—produced quickly and economically by one machine.

Ludlow Typograph Company 2032 Clybourn Avenue, Chicago 14

Set in members of the Ludlow Tempo family



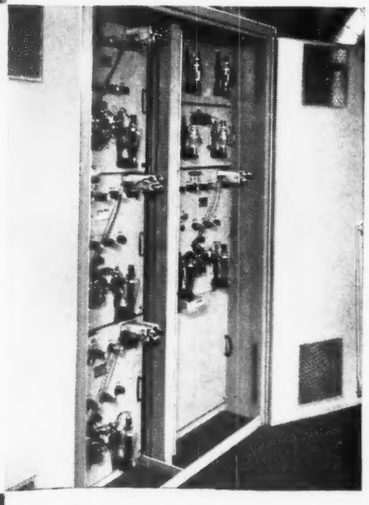
Holds hairline register on cellophane

At Milprint, Inc., in Milwaukee, which prints multicolor wrappers on a continuous roll for use by food packers, G-E color-register control has permitted a substantial increase in press speeds. Close register is held on this rotogravure press even on such difficult materials as cellophane, pliofilm, and cellulose acetate. As a result, this company calculates the savings in rejects will more than pay for the G-E equipment within a year.

Milprint, Inc., says:

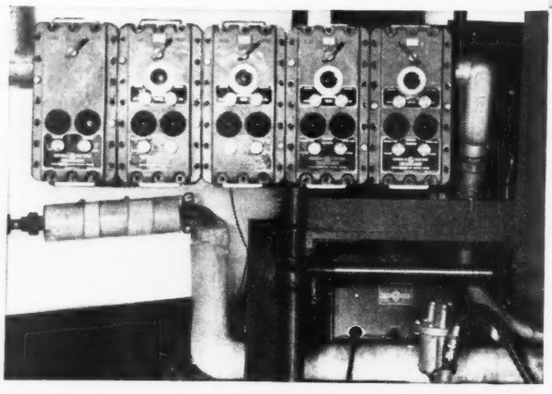
COLOR REGISTER CONTROL

WILL PAY FOR ITSELF IN ONE YEAR



Less Maintenance

Explosion-proof design of all press-mounted equipment such as these unit control stations at Milprint, sturdy construction of all components, and circuits designed for industrial use reduce and simplify maintenance. All-electronic system minimizes number of parts which can come out of adjustment.



Less Waste

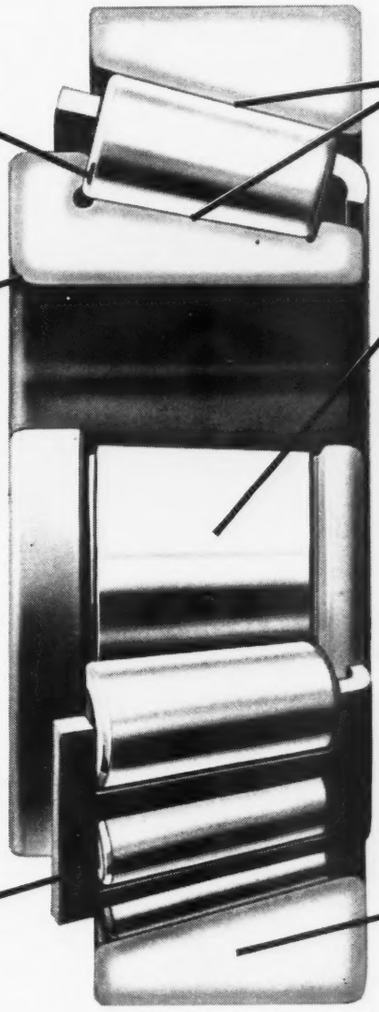
Waste is reduced and printing quality improved through accurate register because this all-electronic control provides a rate of correction that is proportional to the amount of misregister and is sensitive instantaneously to any error . . . no time is lost in magnetic relays picking up and solenoids operating.

Investigate Today! **For full information and details on this outstanding equipment, contact the printing specialist in your nearest G-E apparatus sales office or write now for bulletin GEA-5079 "G-E Register Control for Multicolor Printing."** ***Apparatus Department, Section 653-2, General Electric Company, Schenectady 5, N. Y.***

GENERAL ELECTRIC

653-2

10 reasons why your best bet in bearings is TIMKEN®



1 *Rib of cone maintains roller alignment, prevents skewing, assures maximum bearing capacity.*

2 *Generous radius permits greater shaft strength.*

3 *Available in 26 different types.*

4 *Precision manufactured. Available with runout tolerance of only seventy-five millionths of an inch (.000075").*

5 *Soft steel cage separates rollers, prevents scuffing.*

6 *Case-hardened surfaces resist wear.*

7 *Micro-inch surface finish makes friction negligible.*

8 *Available in 5850 sizes.*

9 *Made from Timken fine alloy steel for long bearing life.*

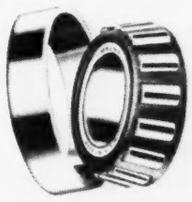
10 *Tough inner core resists shock.*

OTHER tapered roller bearings may *look* like Timken® bearings. But there is no other tapered roller bearing which gives you as many important advantages as you get with Timken.

Ten of these advantages are listed above. They all stem from the fact that the Timken Company is the foremost producer of tapered roller bearings and leads in (1) advanced design, (2) precision manufacture, (3) rigid quality control, (4) special analysis steels.

Be sure that every tapered roller bearing *you* use carries the name "Timken", the trade-mark of The Timken Roller Bearing Company, Canton 6, Ohio. Canadian plant: St. Thomas, Ontario. Cable address: "TIMROSCO".

TIMKEN
TRADE-MARK REG. U. S. PAT. OFF.
TAPERED ROLLER BEARINGS



NOT JUST A BALL ○ NOT JUST A ROLLER ▭ THE TIMKEN TAPERED ROLLER ▭ BEARING TAKES RADIAL ↓ AND THRUST →◫← LOADS OR ANY COMBINATION ✳

PRINTED ON

GOSS PRESSES

Thirty high speed Goss units are giving Cincinnati Enquirer readers all the breaks on late news in a quality-printed paper. Recently installed are 14 Goss Headliner Units with Tension Lock-Up, three pairs of folders and four double color decks. This huge line of presses (shown above) is in addition to 16 Goss units—installed in 1925—to which seven color cylinders have been added. Thus combined in this plant is evidence of Goss stamina and the most advanced design in newspaper press equipment.

it's **GOSS** *again*

THE GOSS PRINTING PRESS COMPANY
1535 S. Paulina St., Chicago 8
Duplex Division: Battle Creek, Mich.
Goss Printing Press Co. Ltd., Preston, England

CHIP-PROOF...

CORROSION PROOF...

NEARLY 3 TIMES LIGHTER

... and only a fraction of the cost!

20" x 24"
(SEE COUPON FOR OTHER SIZES)

$19.50
INCLUDING FEDERAL TAX

You *don't* have to be Charles Atlas to lift *this* tray . . . *it weighs only 3 pounds 10 ounces!* You *don't* have to dig deep into the bankroll to buy *this* tray . . . *it costs a lot less than stainless steel, and in the long run, than porcelain!*

You *don't* have to handle the Chemco Plastic Tray like a carton of eggs, either! There's no coating to chip and pave the way for rapid corrosion as with porcelain trays. It's solid, tough, *one-piece plastic* . . . molded with reinforced bottom and self formed handles . . . *absolutely corrosion proof to all photographic processing and plate making chemicals of operating strength!* This is the tray that's built to take all the hard knocks of every day use in your darkroom. It will give you more service at lower cost than any other tray on the market!

MAIL COUPON TODAY!

chemco PHOTOPRODUCTS COMPANY, INC.
GLEN COVE, N. Y.

PE-1

Gentlemen: Please follow the instructions I have checked below:

—Send me_____20" x 24" Chemco Plastic Trays, at $19.50 each. I enclose $_____

—Send me_____20" x 24" Chemco Plastic Trays, at $19.50 each. Bill me later.

—I want more information on Plastic Trays in the following size(s): 22" x 28", 18" x 22", 16" x 20", 14" x 17", 11" x 14", 8" x 10", 5" x 7". (CIRCLE ONE OR MORE)

NAME_____

FIRM NAME_____

ADDRESS_____

CITY_____ STATE_____

The Detroit News Buys $o

...to convert existing reels and tensions

FULL-SPEED WEB SPLICING UNITS!

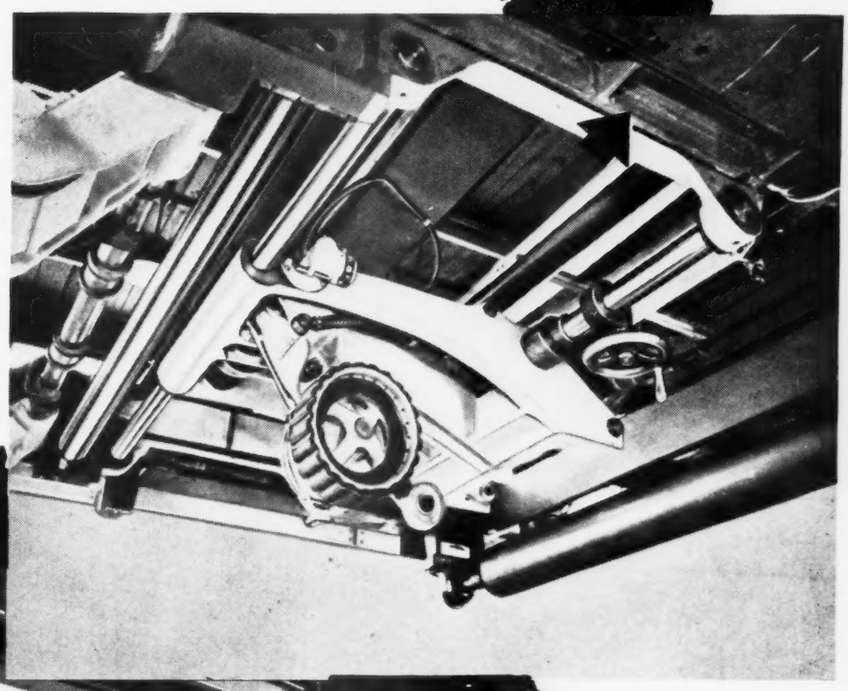
The installation of these new Electro-tab Autopasters will give the Detroit News the advantage of *continuous* press production . . . without *the heavy expense of major press and reel changes.*

No alteration to reel spiders, no complicated timing devices, no expensive drive connections will be needed to bring the six News presses up to high-speed, 'round-the-clock production.

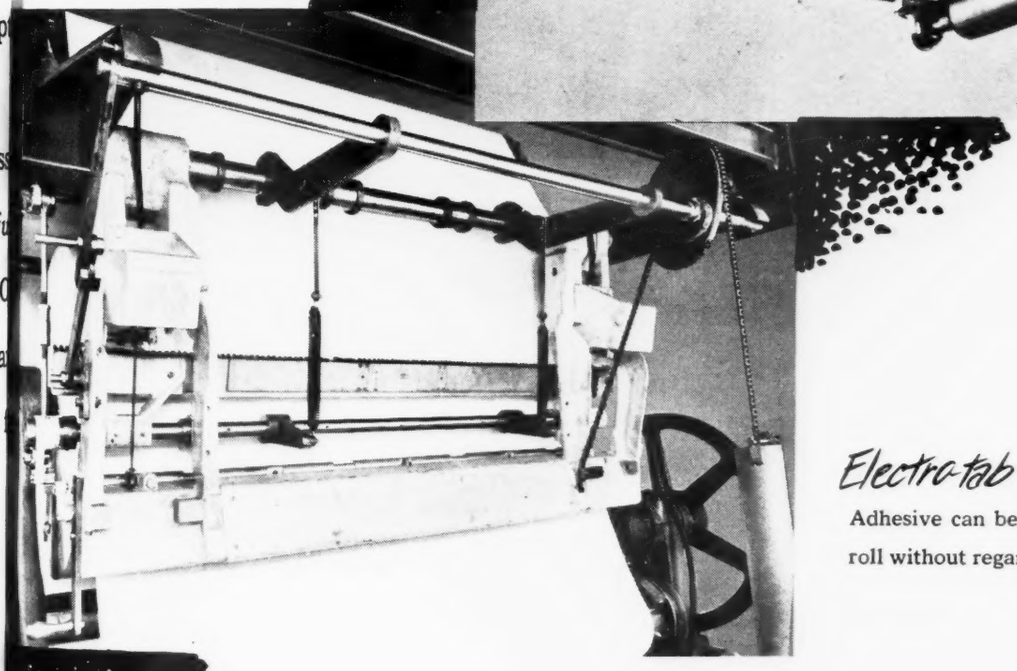
The Electro-tab Autopaster is co pletely divorced from the reel with whi it operates, and can be attached to any exi ing press substructure with two adap brackets.

In newspaper plants where pres are operating at *less than continuous, fu speed production,* the installation of WOO Electro-tab Autopasters will mean ma mum production from present facilities a relatively small investment.

Wood *Electro-tab* Autopasters



he Electro-tab Autopaster is installed as a mplete assembly. Speed-up and timing vice (right) and the brush and knife arm elow) can be fitted to *any* press substruc- e with the aid of only two adapter brack- s (arrow).



Electro-tab IS SIMPLE TO OPERATE

Adhesive can be applied to any part of the roll without regard to scribe marks on chuck.

WRITE FOR FURTHER INFORMATION

WOOD NEWSPAPER MACHINERY CORPORATION

PLAINFIELD, NEW JERSEY • SALES OFFICE: 501 FIFTH AVENUE, NEW YORK 17

The Detroit News

THE HOME NEWSPAPER

again selects Morrison Model 3-A Saw Trimmers

Final inspection of 6 Model 3-A Saw Trimmers shipped to The Detroit News

Detroit News now using (17) Model 3-A Saw Trimmers.

Previous Purchases

February, 1937	1
March, 1938	6
September, 1938	1
June, 1939	1
October, 1940	2
November, 1950	6
Total	(17)

* *Three of these mounted on wheels for greater flexibility.*

Other representative installations (most of them on repetitive purchase) proving superior performance and satisfaction.

Detroit Times	6	Fort Wayne News Sentinel	11
Detroit Free Press	4	Houston Chronicle	9
Buffalo Evening News	9	Houston Post	6
Cleveland Plain Dealer	11	Kansas City Star	9
Cleveland Press	6	Milwaukee Journal	20
Cincinnati Enquirer	6	New Orleans Times-Picayune	13
Cincinnati Post	6	New York Times	14
Cincinnati Times-Star	3	New York World-Telegram	12
Chicago Daily News	7	Pittsburgh Press	11
Dallas Times-Herald	9	St. Louis Globe-Democrat	14
Dallas News	11	St. Louis Post Dispatch	14

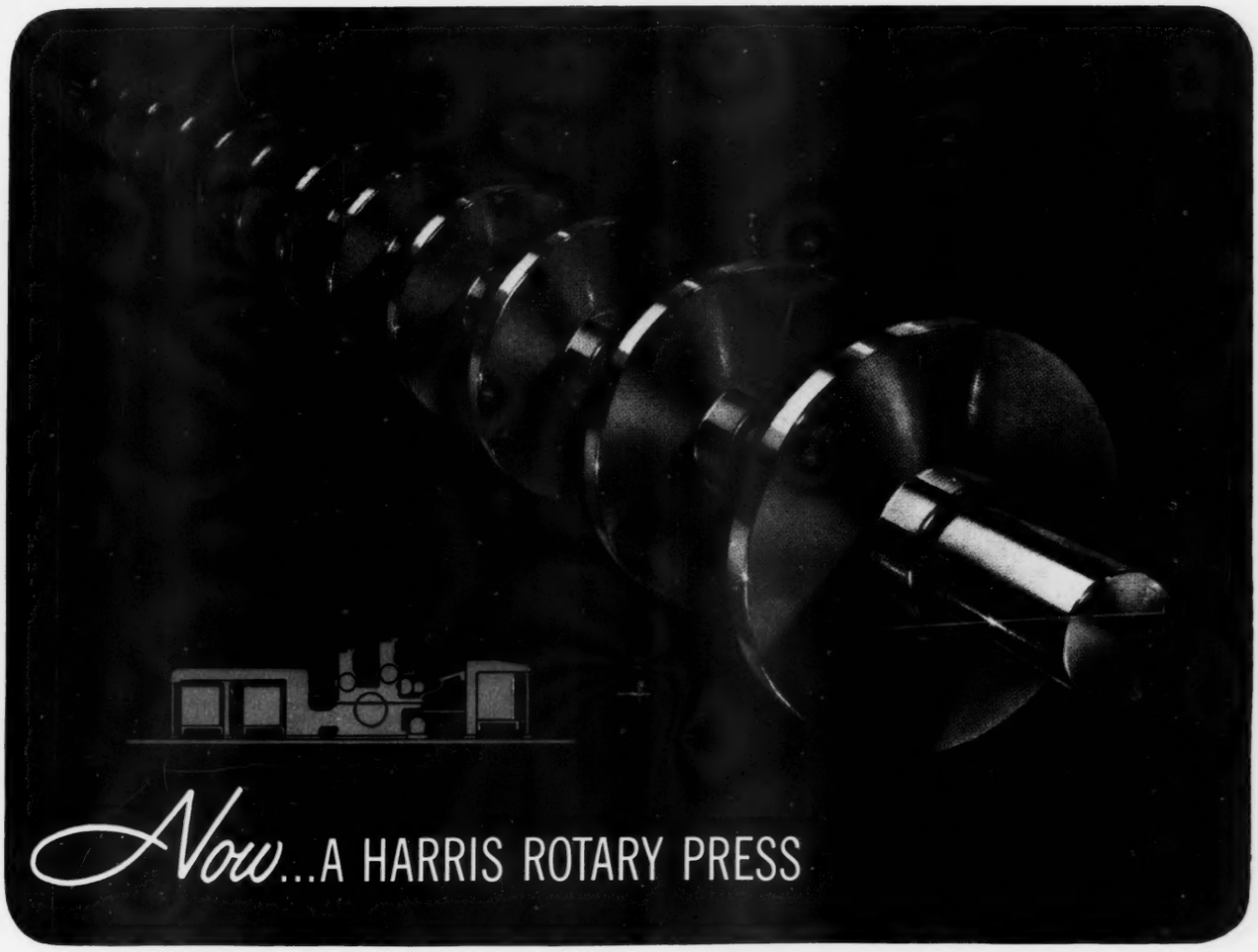
Symbol of Operating Economy

THE MORRISON COMPANY MILWAUKEE WIS.

THE *Morrison* COMPANY

PRECISION MACHINES FOR THE GRAPHIC ARTS INDUSTRY

125 W. Melvina Street, Milwaukee 12, Wisconsin



with FEED ROLLS *for unequalled register*

Hairline register is easily controllable . . . every sheet feeds accurately, with the Harris feed roll register system. Gives positive control of the front register of the sheet; pushes the sheet tightly against the grippers and holds it with exacting precision, yet without damage to the sheet.

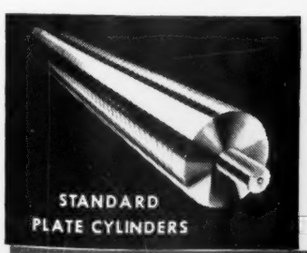
This is another extra feature of press design built into the new, two-color 45 x 65″ Harris rotary letterpress. It's another reason for the top-quality work which this specially-built press produces.

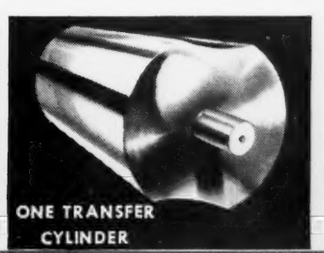
For instance, 5 *form rollers* on each color unit, assure smooth, even coverage on the most difficult solids. *Standard plate cylinders* use plates made with existing precision platemaking equipment. A *single transfer cylinder* between units makes only one grip and one release, thereby protects register and prevents damage to sheets. The *double delivery system* permits sheets to be fed to either of two piles or alternately to both.

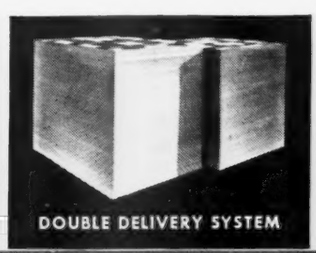
Quality printing can be made more profitable. May we discuss how this new rotary press can increase your production?

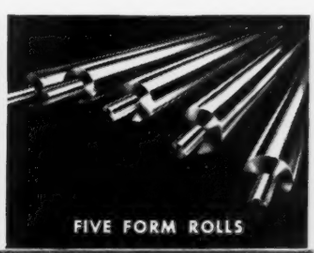
HARRIS-SEYBOLD COMPANY

GENERAL OFFICES, DEPT. G, CLEVELAND 5, OHIO


STANDARD PLATE CYLINDERS


ONE TRANSFER CYLINDER


DOUBLE DELIVERY SYSTEM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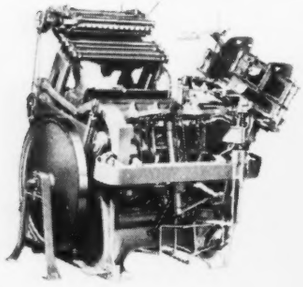

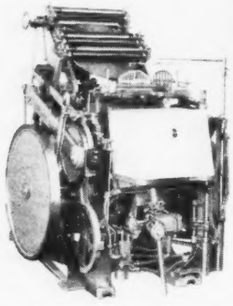

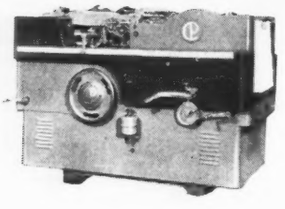

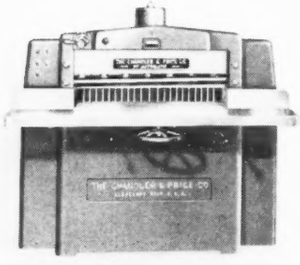

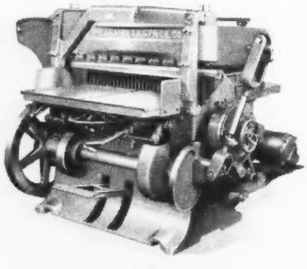

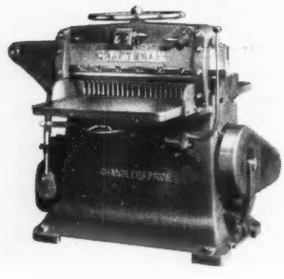

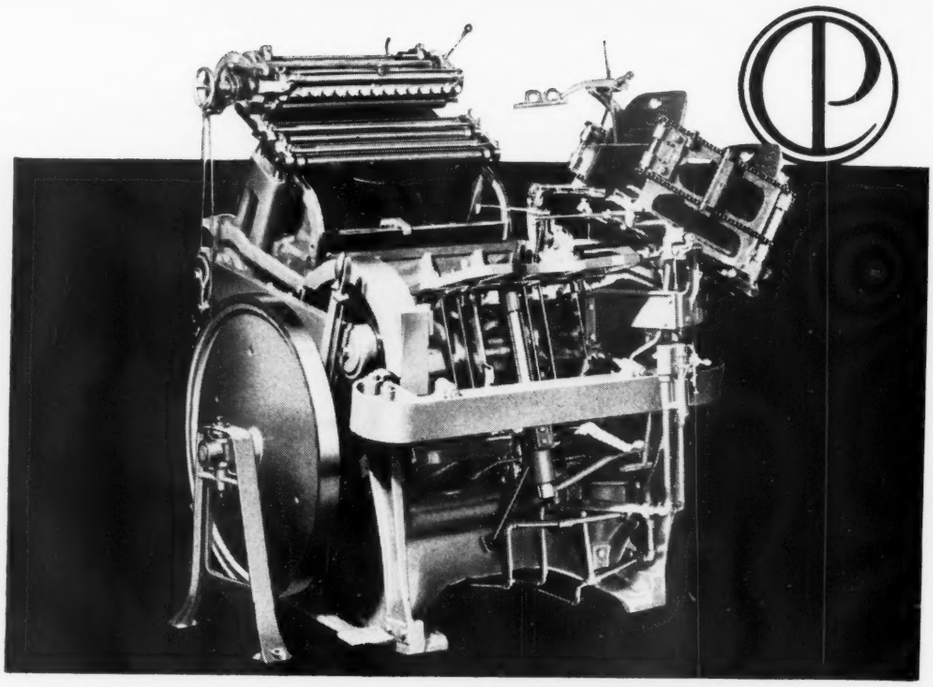

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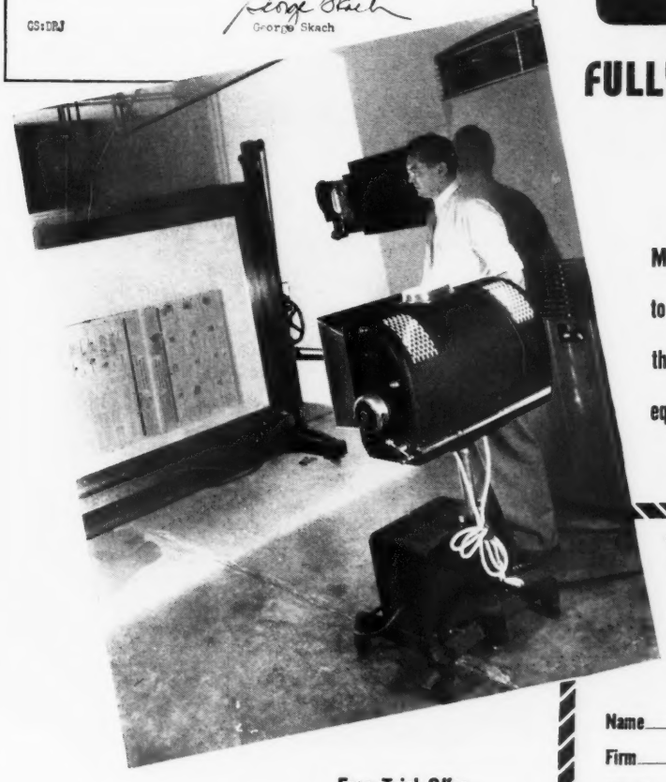

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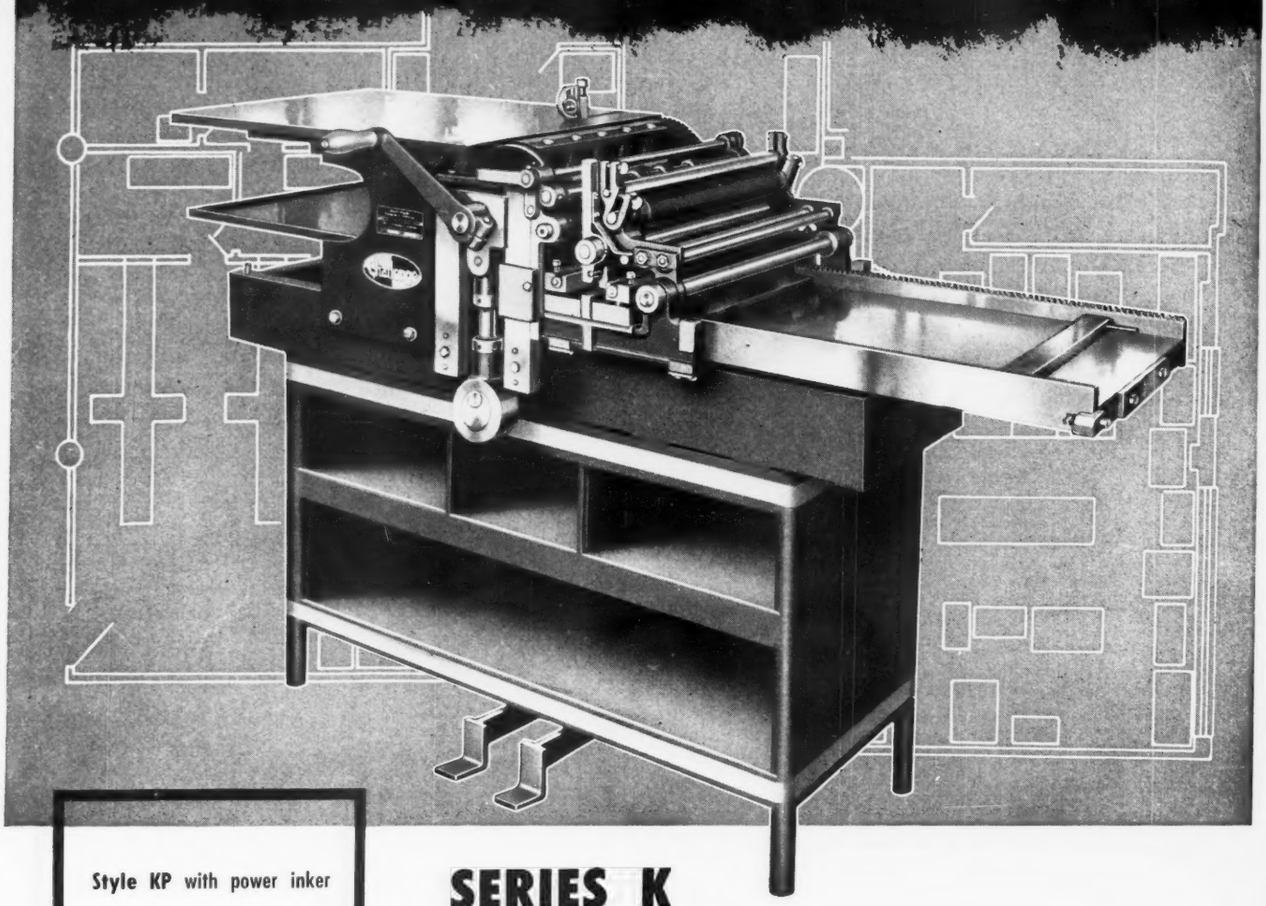

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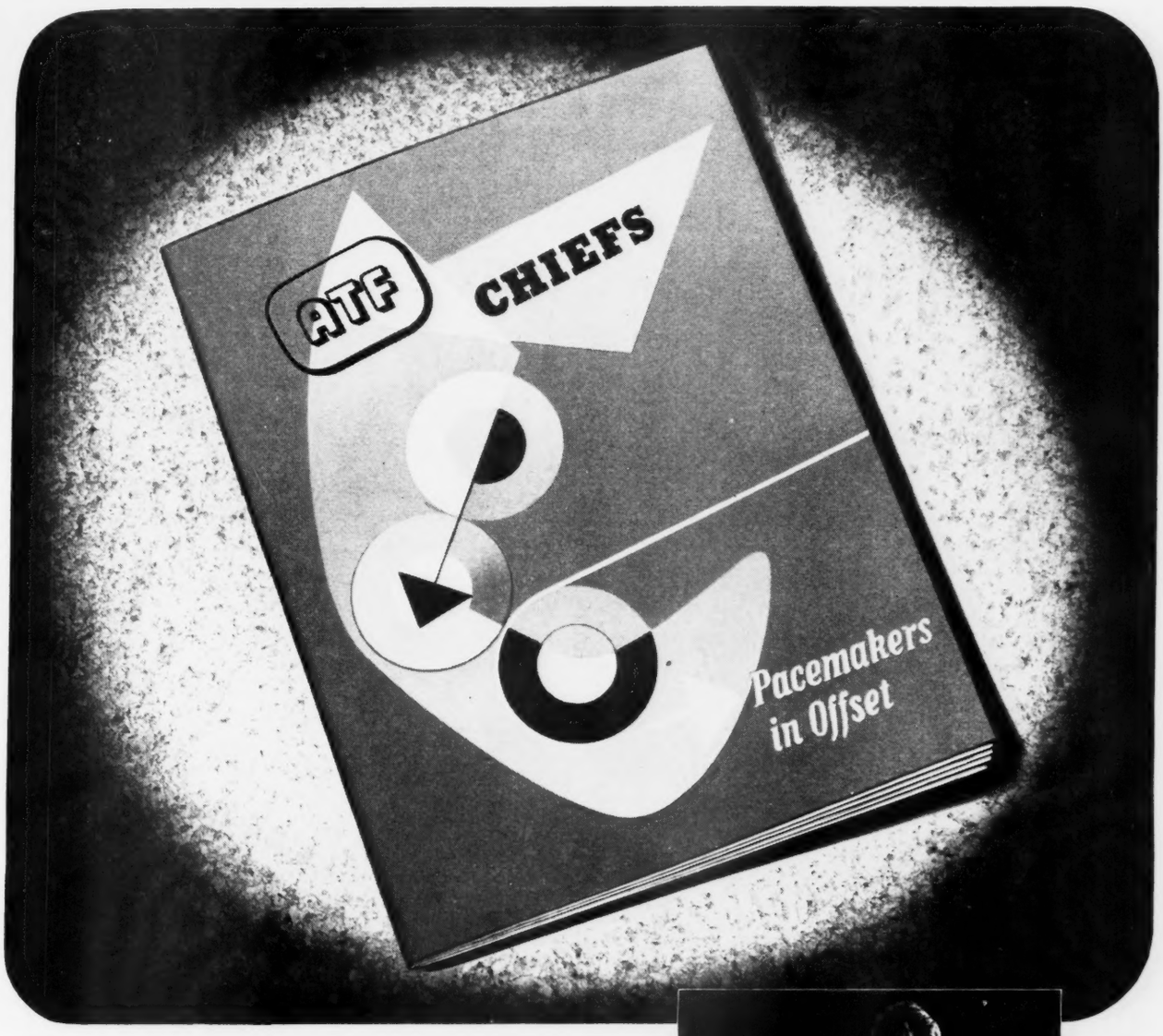

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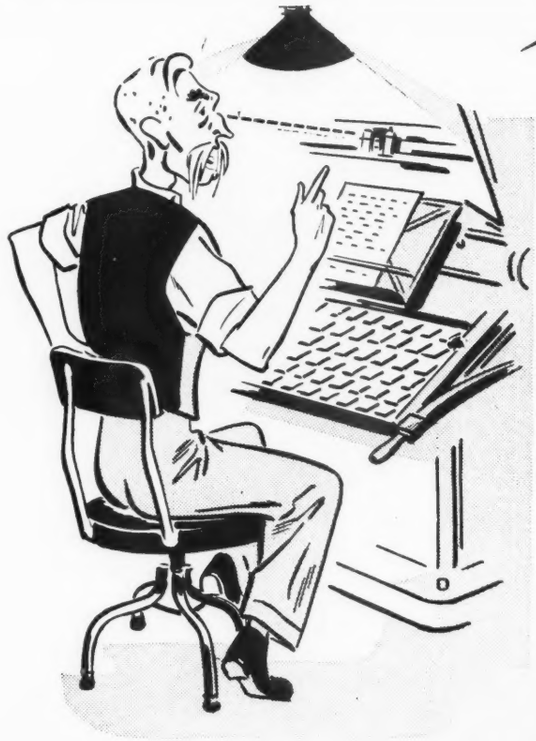

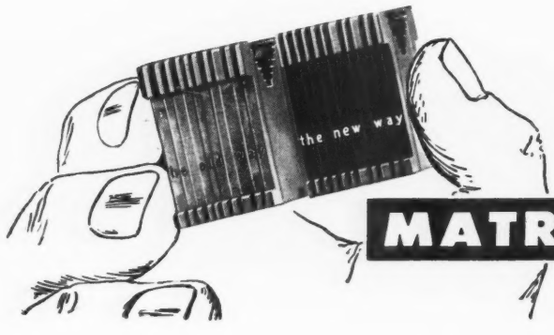

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PRINTING
EQUIPMENT
Engineer
January 1951

Variable Height Transfer Truck

By JOHN P. KEATING*

*Production Manager, Milwaukee (Wis.) Journal.

TO answer a Composing Room need, a variable height transfer truck was designed and built at the Milwaukee (Wis.) *Journal* when nothing of this kind was available elsewhere.

With the truck one man is enabled to remove full page ads from storage racks as low as 13 in. above the floor (Fig. 1) and to transfer these page galleys to ad frames or proof presses as shown in Fig. 2. Or if desired, the ads can be transferred directly to the chases for page makeup as shown in picture Fig. 3. This latter use has become one of the truck's most important applications at the *Journal*.

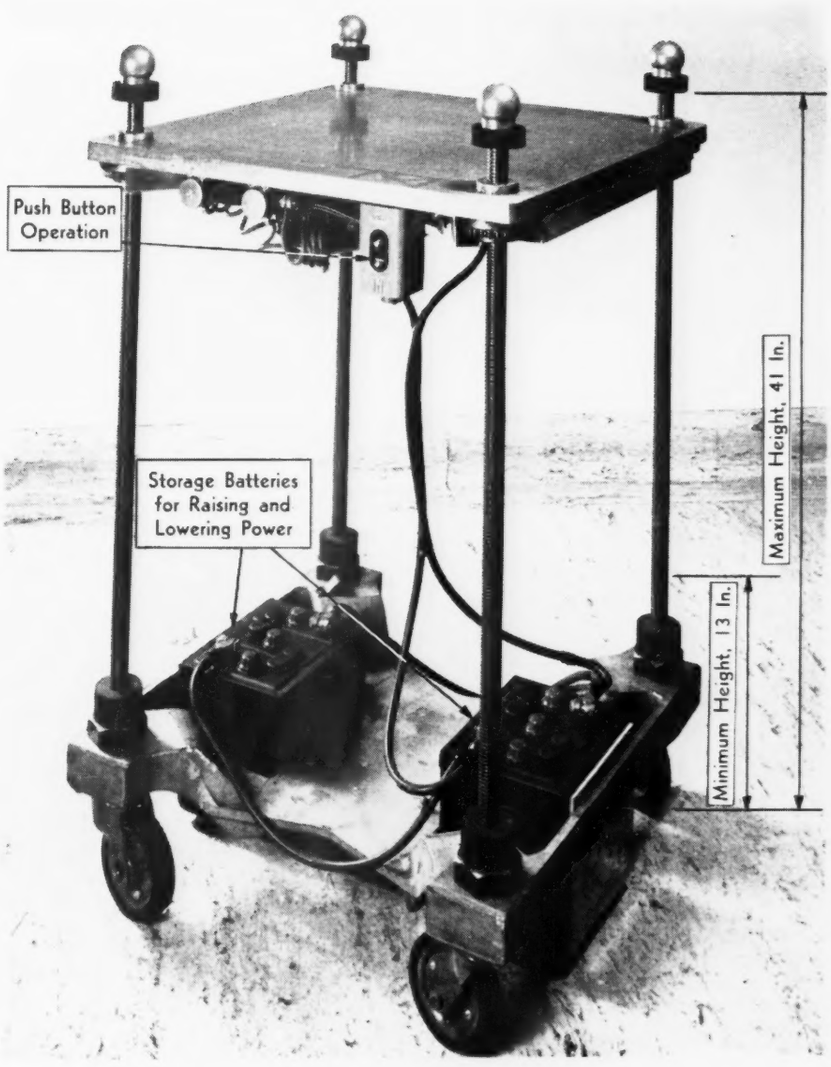


Fig. 4. ➡

In Fig. 4 is shown the construction of the truck. The base is cast aluminum. The four columns are in effect screws with a double thread. Bronze nuts in the four corners of the truck top are held in ball bearings by bronze collars. The nuts ride the threads on the legs and are connected to four sprockets which are driven by a chain from a drive sprocket mounted on the underside of the movable top. The device is driven by a small 6 v. motor powered by two automobile storage batteries which can be operated through a 24 hr. period with a 1 hr. charge. A two-station pushbutton is used to raise or lower the table top.

In general, the truck has made it possible for one man, without lifting, to move material full page in size from storage as low as 13 in. above the floor to another location up to 41 in. above the floor.

Patents have been applied for and arrangements are being made for its manufacture and sale.

Fig. 1.

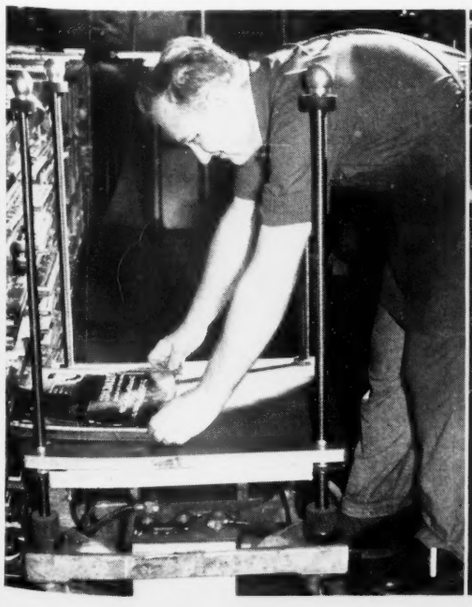
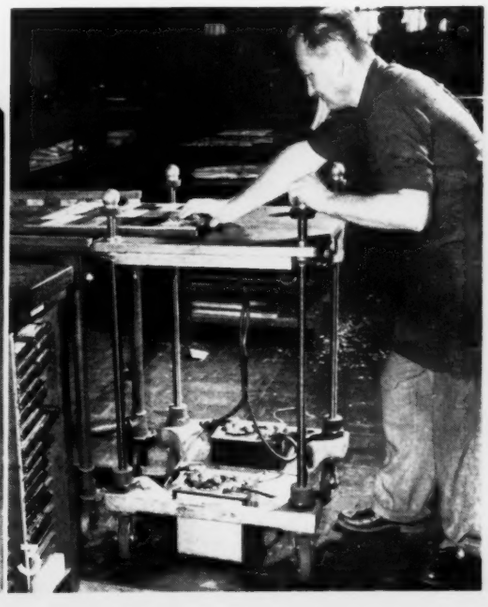
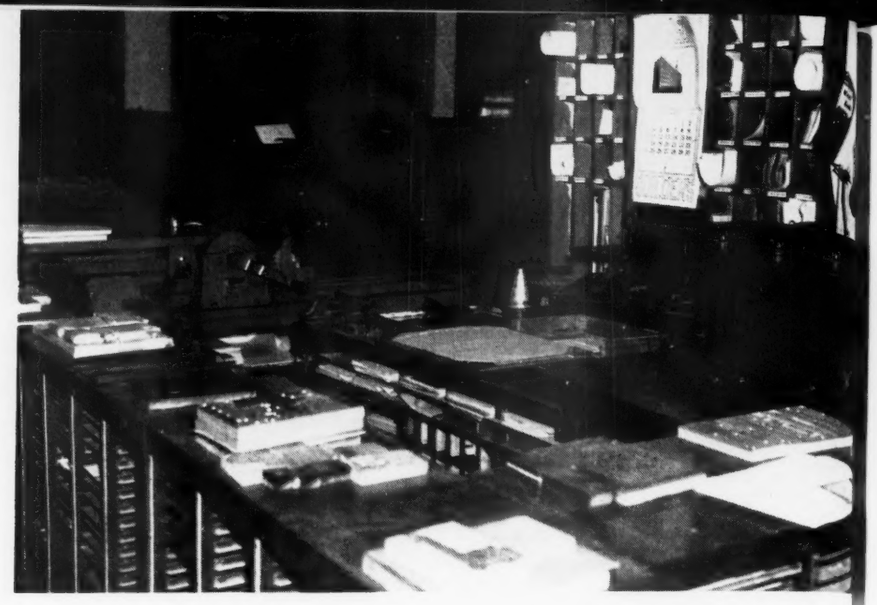


Fig. 2.

Fig. 3.





View of pre-makeready department in composing room of A. S. Gilman, Inc., Cleveland commercial printing plant. Including a precise proof press, a Hacker plate gauge and all of the tools and gadgets necessary are to be found here.

Pre-makeready

Methods are employed in separate department in commercial letterpress printing plant to reduce plant production costs

By EDWARD H. OWEN

CHECKING, squaring plates and correcting photoengravings, electrotypes and other printing plates as well as type matter for type high dimension, is the function of the pre-makeready department in the plant of A. S. Gilman, Inc., of Cleveland, O. As other plants have discovered, the Gilman firm finds it is more economical from a production cost standpoint to eliminate inaccuracies in plates before they are locked in the form. Many experts agree that the differences between press hour rates and hand hour rates decidedly favor pre-makeready methods from the production cost standpoint.

A. S. Gilman, Inc., executes a variety of letterpress and offset work. Most of the work consists of publications, catalogs, mailing pieces, and miscellaneous kinds of printing. All of the letterpress portion of the business is done on flatbed presses. The type composition is done on Monotypes and Intertypes. Its press equipment ranges from platens to various sizes of cylinder presses.

The Pre-makeready Department at the Gilman plant is operated in the composing room and cooperates with the pressroom and offset department under the overall supervision of Plant Supt. George Ebert. A number of operations are assigned to the department. These are: check all plates coming into the plant; squaring plate; correct defective plates; underlay and interlay low plates; pull proof of all halftones on 50 lb. super calendered stock for making hand cut overlays; pull reproduction proofs; record plates received in the plant, and filing plates in the proper cabinet or rack.

Pre-makeready Nerve Center

Neatness, organized working methods and procedure, and modern equipment and tools, characteristic of the printing plant schooled in up-to-date operational techniques, are evidenced within the pre-makeready department. Nerve center of operations is an ingenious work bench designed especially to fit the needs of the department. The work unit is equipped with a Hacker Plate Gauge, ink slab and brayer, bench vise, and 15 in. by 24 in. lockup surface which is covered with a sheet of cardboard for cutting underlay and interlay sheets.

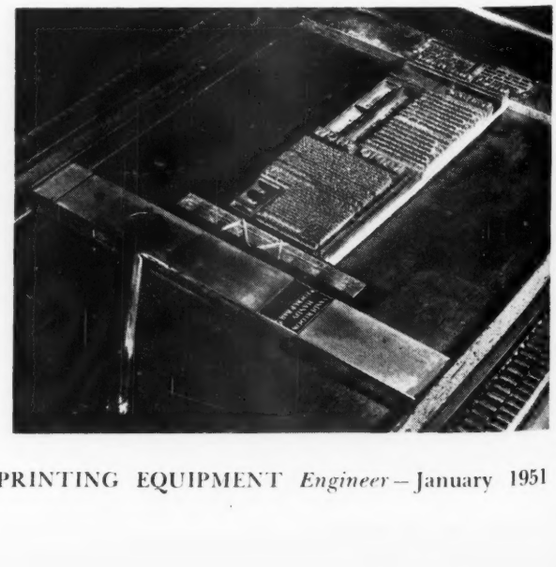
The lower part of the bench is divided into compartments for storage of underlay sheets of various thicknesses, lockup furniture, and drawers in which are kept working tools used in the repair of plates. The upper section of the unit serves to accommodate proofs, composition orders, plate orders, etc., for the various departments within the plant. Each pigeon hole is appropriately labeled for receiving the material earmarked for that particular department or person.

The department which occupies an area of approx. 7½ ft. by 13½ ft., is neatly localized by several galley cabinets, the tops of which can be used for temporary storage space for the plates being processed. A No. 4 Vandercook Proof Press, a turtle truck with flat steel surface, and an engraver's tool kit complete the equipment.

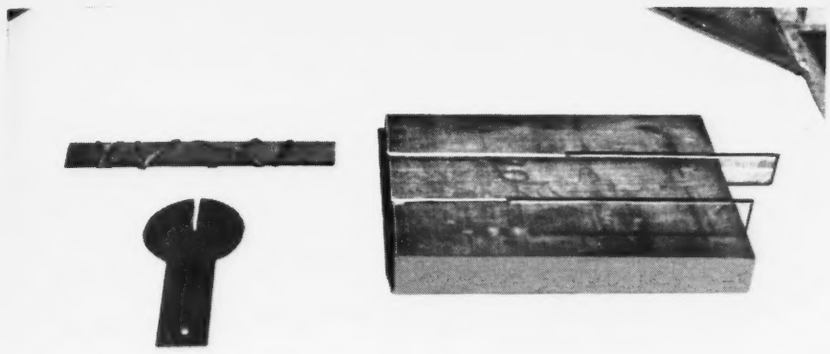
Routine Check

Responsible for the department's functioning is Edward J. Jarzen, who follows a routine check on every plate delivered to the plant. Each plate is carefully examined for scratches, nicks, broken letters or lines, and other defects which may have occurred in shipment or handling. If the plate is damaged beyond the abilities of the pre-makeready department to restore it to printable condition, both the customer and the platemaker are notified and instructions are requested.

Some plates damaged by a tool or through handling are repaired by the



A page of composition has been locked on the proof press bed for taking a reproduction proof. The slugs encircled with rubber bands prevent tail whip when the type is being proofed.



At upper left is shown slugs encircled with a rubber band. Its use is illustrated in the picture on the opposite page. At lower left is a gadget which is used to prevent accidental damage to cuts when a nail is being driven into the base. At right is an inverted mounted plate. Two cuts have been taken part way through the wood block and 6 pt. slugs have been inserted to correct a warped condition of the wood base.

pre-makeready department. In the case of a dented cut, such as a halftone in which no serious damage has been done to the screen, the plate is removed from the base and placed face down on a rubber pad on the work bench. On solid plates, a smooth steel imposing surface is used eliminating the rubber pad. The plate is pounded from the back with a tool known as a hurdy gurdy which pushes out the dent while the pad protects the face of the plate.

Useful Gadget

When re-nailing a plate on the wood base, a rubber pad approx. the thickness of a 6 pt. slug is used to prevent any damage from occurring to the face of the plate. The pad, which measures 4¼ in. long, resembles the shape of a Yale key without notches. The extended end of the device, which would be the part of the key inserted into the lock, acts as a handle for holding the pad to the plate. A ⅛ in. slit is cut radially into the center of the 2 in. diam. rounded end of the device. This slotted opening is placed over the nail, which has already been started in the flange, enabling the remaining area of the pad to protect the corner and face of the plate when the nail is hit with the hammer.

If the plate is mounted on a wood base with nails, another check is immediately made to insure that there are sufficient nails on the flanges to hold the plate to the base during the press run. Still another step in the routine examination of all plates is the check for warp in wood mounted cuts. This is especially true in flush mounted plates which are bonded to wood base with thermoplastic material.

Testing Wood Base

An accurately machined steel flat surface plate measuring 11 in. by 15 in. is used in making this check. Plates are laid on the surface while the corners are examined for rock in the wood base. Warped cuts are especially common during the Spring of the year resulting in extraordinary precautions being taken then by the pre-makeready department to detect this fault. To offset this condition in the wood base of plates which remain standing for further use in the Gilman plant, the base is coated with a mixture of machine oil which soaks into the wood.

Correcting Warped Bases

Frank Shuttera, Pressroom Foreman at the Gilman plant, admits that correction of warped base is difficult in most instances, but a trick employed by Shuttera and Jarzen sometimes produces good results. Correction of warped wood base depends upon three factors, which can be stated as: the extent of warpness within the wood; the direction of the warp; and the grain of the wood.

The first step is to make one, two, three, or possibly four cuts, depending upon the extent of the warp, with the composing room saw through the wood base. The depth of the saw cut is made approx. 6 pts. away from the plate or deep enough to allow a lead, slug or reglet to be inserted into each sawed slot. The plate is then locked in a chase and pressure exerted on the quoins. The chase is turned over and placed face down on a sheet of cardboard for protection of the face of the plate. The thickness of leads, slugs or reglets placed within the saw cut is determined by the direction of the warp. The chase is turned back over and more pressure applied on the quoins. The plate is now tested again for warp by trying to rock the corners on a flat surface. If the warped condition of the base is not relieved, leads or card stock are added or subtracted to the saw cut until the rock in the plate disappears. This operation is followed only in the case of warped flush mounted cuts. Warped plates or electrotypes mounted by means of nails are usually re-mounted.

Gauging the Plate

After inspection and necessary repairs have been completed, the individual plates are gauged for correct height. Underlaying may be required on some cuts while undercutting is necessary on others. This is determined by the kind of cut and the chief component of the plate.

To explain this, certain steps are followed. A Hacker Plate Gauge is used in measuring the height of each cut. Halftones must meet the 0.918 in. requirement of type high. In the event a halftone is 0.002 in. over this dimension on an overall basis, a Wesel planer is used in planing the base down to 0.918 in. If only one or two corners of the halftone cut are over 0.918 in., the high corners are applied to sandpaper to lower these to the correct height.

Underlaying Cuts

A halftone cut that is 0.001 in. or more under type high on an overall basis is underlaid with a sheet of paper of the proper thickness. This paper is micrometered beforehand and the supply, separated as to thickness, kept in compartments below the work bench. Ten compartments are available to accommodate the 8½ in. by 11 in. sheets in thicknesses of from 0.001 in. to 0.010 in.

The same procedure is followed in the case of cuts having corners under type high. The edge of the underlay sheet which joins the low corner to the area of the plate which is of the correct height, is never cut with a makeready knife, but is torn by hand instead. This feathered edge eliminates the possibility of a noticeable line appearing in the image when an impression of the plate is taken.

In the case of line cuts, the principal area of the cut is taken into consideration. Should the plate be composed mainly of fine lines with little or no solid areas, the cut is planed down to 0.002 in. below type high. However, if the plate is a solid or solid areas predominate, the solids are built up by underlaying to 0.921 in. or 0.003 in. over type high.

Treating Vignetted Cuts

Vignette engravings are interlayed by removing the plate from the base and pasting an offsetted proof of the cut in register on the back of the plate. The solid areas of the vignetted plate are built up to 0.918 in. while the shaded edges are allowed to drop down from 0.913 in. to 0.908 in. This allows for a gradual disappearance of the vignetted edge in the impression. The plate is then retacked on the wood base and the cut is gauged again. Should the cut be over type high in the center or solid area, it is planed down on an overall basis to 0.918 in.

Working with Customer

Electrotypes, just as is the case with all cuts, are scrutinized upon receipt in the pre-makeready department. Customers are notified in the event serious defects are detected, such as shallow plates, plates made from worn type, etc. If the time limitation does not permit the electrotype to be made over, Jarzen is equipped to make minor repairs such as tooling bad edges, soldering broken type or rules, routing out dead metal, etc. As in the case of engravings and line cuts, halftones are built up or reduced to

0.918 in. and line drawings are kept at 0.002 in. below type high and solids at 0.003 in. above, depending upon the design of the plate.

Reproduction Proofs

Another important function of the premakeready department is pulling reproduction proofs on Kromkote for the offset department or for customers. This work is done on a Vandercook No. 4 Proof Press equipped with power ink distribution, changeable inking units, micrometer sheet guides and combination foot operated and automatic grippers. The press is especially designed for this kind of work and for general proofs of forms containing fine screen halftones and type. The press will accommodate a maximum form size of 14 in. by 18 in. and a maximum sheet size of 14 3/4 in. by 20 in.

All reproduction proofs are examined carefully by Jarzen with a linen counter for best possible photographic reproduction. Occasionally, a slur occurs which is not readily discernible to the human eye without the aid of a glass. This usually happens when the tail of the sheet drags loosely over the lockup bar on the press just after the impression has been taken.

Eliminating Slurs

Jarzen eliminates the slur by wrapping a large rubber band around a 6 pt. slug, approx. 20 picas long, and lays it on the lockup bar or on any piece of furniture laying on the bed of the press. This must not exceed 0.002 in. over type high. As the cylinder advances over the plate and bed, the tail end of the sheet rolls over the wound rubber band and is held snugly to the cylinder thus preventing movement which causes slurs.

All proofs are pulled on 50 lb. coated stock. Plates for any of the several publications printed by the Gilman plant are proofed for the customer in the colors specified. Two, three and four color plates are proofed in the colors in which they will run and are checked carefully by the proof press operator to assure register of the plates.

Color Plate Check

As a precaution against leaving out a color plate during the run of one of the publications printed by Gilman's, one proof of each plate is posted on a large board in Superintendent Ebert's office. These are hung on a hook under the lettering specifying the appropriate colors in which the plate will run, such as, special red, standard red, standard blue, special green, etc. This enables Ebert to tell at a glance the various colors in which any of the plates will run in that particular issue.

Another set of proofs of the color plates is pulled in register and delivered to Emil Lacinak for a check on register after the form goes on the press. This also enables Lacinak, when lining-up a press sheet, to foretell if the color plates have been imposed correctly in the form.

Temporary Storage

After the plates have been checked for defects, corrected, gauged for correct height, underlayed or interlayed (whichever the case may be), and proofed in the color specified, they are stored until ready for lockup. An open rack located in the center of the composing room and divided into alphabetically marked sections, is used to accommodate this storage. Cuts are filed in the appropriate section in the rack designated by the name of the customer.

This is the storage procedure followed with all cuts entering the Gilman plant, with the exception of those used in the publications. These are placed in a box labeled with the name of the publication and are located on a separate rack. It enables the makeup men, when ready for the cuts, to carry them all off together.

Joseph L. Connell, Superintendent of the Todd Company Printing Dept., watches George Kuder adjust stock for cutting. Kuder has been with the company for over 30 years.

Todd Modernizes

JOSEPH L. Connell, Superintendent of the Todd Company, Rochester, N. Y., relates that his company has been modernizing its plant and equipment. The bulk of the company's production consists of checks for banks, individual depositors and office forms. It has been found that Todd was being called upon for increasing standards of accuracy because company products are being used in intricate types of accounting machines and other automatic office equipment.

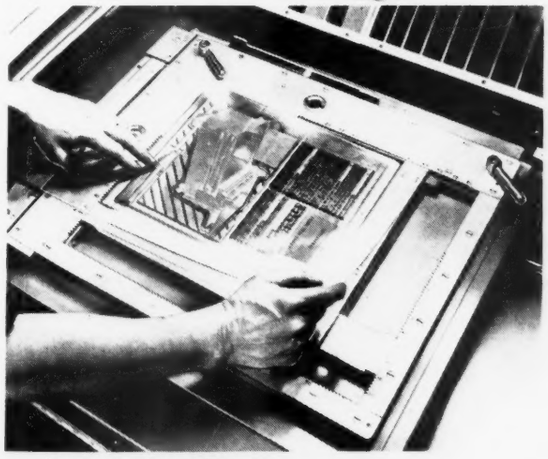
Recently, states Mr. Connell, company executives had occasion to examine cutting operations. Among the items checked into were installment loan coupon books, the pages of which must be cut accurately. Three key men were appointed to study methods and equipment and to present a report of their findings. The committee consisted of the bindery foreman, cutting machine foreman and the chief maintenance engineer. Their study revealed the advisability of installing four modern cutters. Two were installed last July and two more in August. As a result of their report, and after installation and use of the new cutters, four more were ordered for December delivery.

Mr. Connell reports that with the late improvements incorporated in the design of the cutters, particularly the hydraulic clamp feature, a considerable contribution to increased accuracy and cutting production was realized. "Immediately after the first cutters were installed," said Mr. Connell, "we began experimenting. As an example, we previously had problems with the cutting of the coupon books. Even though these were a production item on which speed was vital if they were to be manufactured profitably, we found through experience with the older equipment that unless we limited cutting to lifts of 50 sheets the spoilage and re-runs quickly ran production costs beyond profitable limits. With the new cutters, however, we were able to establish lifts of 250 sheets as standard production practice."

Atlanta Linotype Agency

Mergenthaler Linotype Co. recently opened a new agency in Atlanta, Ga., located at 300 Luckie St., N. W., which will serve as headquarters for sales and service of Linotype machines, parts and matrices in the Southeast. In charge of the newly established office is Joe F. Schuman, formerly manager of the New Orleans Linotype agency. According to Harry W. Porte, Vice President in Charge of Sales, the Atlanta branch will serve the states of Florida, Alabama, Georgia, Tennessee, Virginia, North and South Carolina, and parts of Kentucky, Mississippi and West Virginia. Other personnel at the Atlanta office includes Harold F. Bott, in charge of sales service, and Paul G. Poynor, in charge of sales promotion.

At top is view of Vandercook Makeup Gauge or Pre-press Unit. All materials for the precision making up of forms or pages to exact dimensions are at hand. Proofs of black and/or color forms may be taken in register. Pedal at lower right is for lifting form to test lockup.



In center: When registering two or more colors, key form is inked and impression is taken by rolling impression cylinder over sheet of hinged acetate. Sturdy chase is calibrated in picas. Two round micrometer direct reading scales are calibrated in points for checking justification.

At bottom: The chase-like frame of the Vandercook 68 Precision Makeup Gauge has been swung upwardly to locked position. Compositor is sliding form onto galley after checking form for position, alignment, register, lift, squareness and size.

Linotype Specimen Book

A *One-Line Specimen Book of Linotype Faces* will be distributed to a restricted list of printers, designers and publishers within the next few weeks by the Mergenthaler Linotype Co. The book includes one-line showings of 1260 individual type faces, more than 1400 items of decorative material and 121 individual alphabets of body and display types. A detailed index shows the range and scope of each series of type faces. Fifteen commonly used keyboard diagrams, new Linotype font schemes and miscellaneous data on printers' measurements around the world, together with the copy-fitting tables are included.

Another Step to Precision and Work Simplification

A PRECISION Form or Page Make-up Gauge has been put into production by Vandercook & Sons, Inc. This device is designed to help the industry in its efforts to reduce costs through precision and work simplification. Forms of greater accuracy will save not only lockup and lineup time on the makeup table, but lineup and position time on the press as well.

With the Vandercook Makeup Gauge, it is possible to obtain accuracy in the makeup of type forms or pages on the makeup bank. Sponsor states it is possible with this new makeup gauge (designated as the Vandercook 68) to make up forms exactly square, exactly alike in size, that can be justified to lift with controlled lockup pressure, and that will be aligned and in register.

As may be seen from the accompanying illustrations, the Vandercook Pre-press Unit consists of a micrometer lock-up device incorporated in a sturdy chase-like frame mounted on the bed of a proof press. This makeup unit is mounted on a steel cabinet equipped with space cases, a lead-and-slug rack, and compartments for string, solvent can, ink and wiping cloths at the compositor's fingertips.

In operation, the gauge is set to the same dimensions as the form to be made up by means of two adjustable bars calibrated in picas. In some instances, this could include marginal furniture, thus saving additional lockup time. Once the gauge has been adjusted for size, make-up proceeds much the same as on a galley. Justification is checked with two pressure bars which apply a predetermined amount of lockup pressure by means of an automatically controlled pressure mechanism. These pressure bars are operated by levers. Two micrometer scales, each graduated in points, tell the compositor at a glance when the form is justified or give him a direct reading as to how many points it is over or under, either vertically or horizontally. A foot pedal raises the form slightly when it is ready to be checked for lift. If two or more colors are to be registered, the key form is inked and an impression taken on a sheet of hinged acetate, using the impression cylinder provided for the purpose.

"In this mechanical age," said President E. O. Vandercook of Vandercook & Sons, Inc., "where accuracy to a thousandth of an inch is commonplace, compositors should no longer be expected to obtain utmost accuracy in making up type forms on a galley with a line gauge. It is easy to understand why this rule-of-thumb hand craftsmanship is a costly operation, since there are as many degrees of skill as there are men at the craft. Even the best compositor, though he may be ever so adept at spacing, cannot avoid variables and inaccuracies in his type forms.

Fig. 1.—Sections of two curved electrotype plates. Upper section, plated by conventional nickel plating process, ran 300,000 impressions. Lower section of illustration shows a plate treated by Lundbye chrome-plating process, ran 1,300,000 copies. It was estimated (1943) that the latter plate was good for at least 5,000,000 impressions.

Chrome Plating

Electrotype and Stereotype Printing Plates

By AXEL LUNDBYE*

**Research, Kable Printing Co., Mount Morris, Ill.*

I.

UP TO a few years ago, chrome plating of electrotype and stereotype plates was considered impractical. Even today, several years after the process has been proved beyond a doubt, the process is used sparingly in the industries. That is too bad, because of the untold dollars that can be saved by its use. To get the printer better acquainted with this process, this story is presented.

About 30 years ago, I was introduced to a new plating process. A new shining surface could be produced by electrodeposition by using a bath consisting of water and chromium trioxide plus sulfuric acid. This new plate was harder than most anything at the time. Besides, it was slippery and it seemed like the surface did not like any fluid or grease. I called this surface an "isolationist". About 12 years ago when the writer was Director of Research for the Crowell-Collier Pub. Co., we tried to chrome plate a fine deposit on some electrotype plates. Some wonderful results were obtained and contrary to the experts, we could not tell the plated plate from the unplated as far as printing quality was concerned.

As a matter of fact, the plated plate seemed to have a finer detail than the unplated. I think that was due to the way in which the chrome was deposited; namely, under high current density and fairly high temperature. There was a tendency when we plated in that manner to crack the surface with minute fine channels impossible to see with the naked eye. But under about 150 power magnification they showed up like a series of canals through the surface. However, it was not before the February *Reader's Digest* in 1943 was printed that it was really proved what chromium could do for printing plates. The plate in question (shown in Fig. 1) was used with blue ink and the plate wore out in less than 300,000 impressions. The writer was called in and I will quote from an article in the *Steel Magazine* of June 14, 1943:

"Close examination of these two printing plates show upper plate is worn to a considerable extent as is evident by the rounded edges of the characters seen as prominent highlight, compared with the lower plate which shows practically no wear. The amazing thing is that the upper plate made by conventional nickel plating process ran only 300,000 impressions and could no longer be used as it had become worn so badly. On the other hand, the lower plate treated by the Lundbye process ran 1,300,000 copies and was estimated as good for at least 5,000,000—a performance ratio of better than 16:1."

And here is one of the interesting things about it. This plate was plated $1\frac{1}{2}$ min.—no more—in a chromium bath containing 33 oz. of chromium trioxide per gallon and 0.33 oz. of sulfuric acid per gal. It was plated at 6 v. at approx. $2\frac{1}{2}$ amps. per sq. in. and at a temperature of 135 deg. F. The distance between anode and cathode was approximately $3\frac{1}{2}$ in.

Time Element All-Important

As stated above no more than $1\frac{1}{2}$ min. plating was allowed. This time element is the hardest thing to get people to understand. About 99% of them want to have more plating put on, because they think that if a little is that good, more must be very much better. However, that is not so. I have heard stories that electrotypes have been plated 20 min., but usually the plates fill up or are spoiled, due to many factors. The most important thing is that when it is plated that long a time so much hydrogen is embedded in the chrome that it has a tendency to make the chrome peel off in spots, which is what usually happens.

In the early part of 1949, the J. W. Clement Co., Buffalo, N. Y., decided to put in a chrome plating installation. This will be described in detail both as to installation and operation. Earlier the company had had some plates chrome plated by Keystone in Buffalo and by Dayton Electrotype in Dayton, O. Some of the results were outstanding. The installation at the Clement Company was contemplated long before 1949, because in 1946-47 I was doing some consulting work for the Company while located at Miami Beach, Fla.

Installation Described

The present installation here consists of an 1800 amp., 6-12 v. motor generator set, a ceramic tank 37 in. long, 29 in. wide and 26 in. deep with a solution level of 23 in. In other words, there is approx. 107 gal. capacity which is arrived at as follows: $\frac{37 \times 29 \times 23}{231}$ and as we had made up our minds to use a concentration of 33 oz. of CrO_3 (Chromium Trioxide) and 0.33 oz. of H_2SO_4 (Concentrated Sulphuric Acid) per gal., we have $\frac{107 \times 33}{16}$ which gives us 220 lbs. of Chromium Trioxide approx. and $\frac{107 \times .33}{16}$ which gives us approx. 2.20 lbs. of H_2SO_4.

The solution is quite easily mixed. The salts are placed in the tank which is filled halfway up with luke warm water and

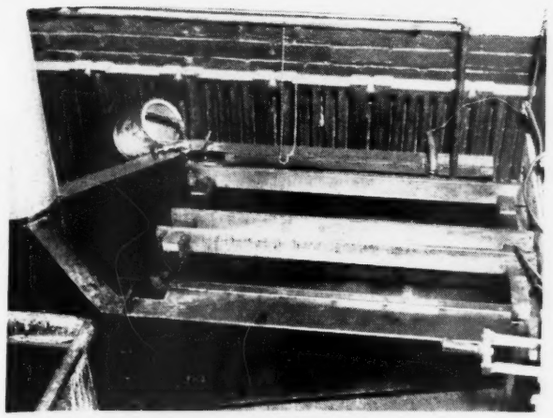


Fig. 2. — Chrome plating tank showing arrangement of bars. At lower left, corner of dragout tank can be seen.

stirred, and within a few minutes the whole thing is in solution. Then fill up the tank with water to the solution level which is approx. 3 in. from the top of the tank. Finally, the H_2SO_4 is added. The CrO_3 costs approx. 29 cents per lb. in 100 lb. lots.

The solution is quite easily controlled.

Bar Hangers

On each end of the tank is placed two pieces of wood (they could be plastic). Notches are cut in the wood pieces to take the anode and cathode bars to assure correct distance at all times between anode and the cathode. We use ¾ in. by 3½ in. copper bars which is sufficient to carry the complete current of our generator. It is assumed good practice not to have less than 1 sq. in. of bars for each 1000 amp. Coming back to the notches in the wood, the distance between the anode and the cathode, of course, is important and should be of uniform distance all around the plates.

Figs. 2 and 3 are general views of the tank. Fig. 2 is taken more or less from the side of the tank and to the left of the tank can be seen what we call a dragout tank. This tank is used when the electrotype is taken out of the plating tank and it is submerged into that tank to wash off the chrome solution which has adhered to the plate. This dragout solution is then used to fill up the plating tank as we lose quite a lot of the solution due to evaporation and the dragout.

In Fig. 3 the three bars, that is the two cathode bars and the one anode bar, can be seen clearly.

Ventilating Duct

On the two sides of the tank the ventilating duct will be noticed. This duct removes the fumes when plating. This is absolutely necessary and it is recommended that the speed of the air over the top of the solution should be somewhere between 1500 to 2000 ft. per min. while plating.

Solution Temperature

The temperature of the solution in the tank while plating should be kept between 130 deg. to 140 deg. F. Our facility for heating the solution is a bottom coil in which we carry steam at approximately 300 deg. F. The control is by an immersed lead coated thermobulb. By this thermocouple the control of the temperature is automatic.

Heater Equipment

The reason steam coil is used in the setup is that it is handy and available in the plant. But there is no reason why an electric immersion heater cannot be used. However, in that case the bulk of the heater must be coated with lead. Or the tank could be built of Armco iron welded together with *Fleetweld No. 5 rod*. Then a gas burner could be inserted under the tank and heated in that manner. As will be remembered, it was stated a ceramic tank was used. But there is no reason in the world why a wooden tank, lead lined, could not be used for the solution. In that case, the lining should be approx. 8 lb. lead per sq. ft.

Plating Machine Parts

In Fig. 2 will be noticed to the right, two copper bars on the wall. These bars are ¼ in. by 1 in. On the wall, a little to the front, is mounted a reversing knife switch. However, that is another story. This equipment is used to plate tools and the like, but for that type of plating please refer to *300% Increase in Tool Life by Lundbye Process* in *Steel Magazine*, June 14 and June 28, 1943, or in the proceedings of American Society of Mechanical Engineers, August 1944, *Performance of Cutting Tools Chrome Plated by Lundbye Process*, from a paper by Axel Lundbye for the Research Committee on Metal Cutting at the spring meeting of ASME at Birmingham, Ala., April 3-5, 1944. However, before leaving these two bars alone, I will just allow myself to quote from this last paper regarding the improvement in the Crowell-Collier Pub. Co.'s plant in Springfield.

"After the wonderful success we had in increasing tool life, it was tried out on many machine parts in our own plant, and below is a list of a few of the parts treated in our plant with an increase from 50% to 900%:

Bindery

Juengst Stitcher:

Stitcher dies	Former hooks
Feed roller holders	Clinchers
Drive bars	Feed rollers
Cover deck separators	Block Cutters
Drivers	Check rollers
Stitcher bars	Gauge plates
Cutters	Gauge pins
Feed dogs	Tail clamp pawls
Former dies	Cover feed dogs
Supporters	Drive dies

Cross Feeder:

Pawls	Tail clamp ratchets
Feeder ratchets	

Seybold Trimmer:

Knives	Clutch assembly
Router bits	

Dexter Folder:

Delivery feed pawls	Gears

New Jersey Stitcher:

Drives	Side guides
Annels	

Carlyle-Johnson Clutch:

Numerous pieces	Expansion ratchets

Composing Room

Slitting Saws

Plate Foundry

Files	Cutting tools
Band saws	Cutters
Router bits	

Job Bindery

Knurled rollers for Cleveland folder

Letterpress Pressroom

Press cutting knives for folders and flat deliveries

Gravure Pressroom

Knives	Doctor blades
Knife blades	Roller-bearing sleeves

Mailing

Gears	Knives

Shipping

Cutters

Stencil Room

Punches

Again, that is another story and does not bear on plating electrotype and stereotype plates. Therefore, we will go back to our original story.

(*Concluded Next Month*)

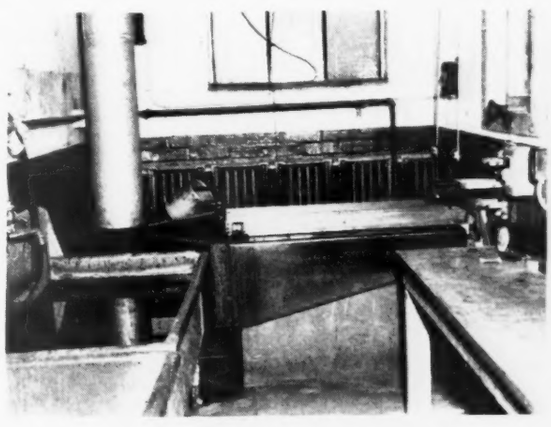


Fig. 3. — Another view of chrome plating tank shown in Fig. 2. The two cathode bars and one anode bar can be seen clearly.

Mailroom Operation Improved at Cincinnati (O.) *Enquirer*

By H. EARLE RUNION*

*Runion Engineers, Louisville, Ky.

SEVERAL months ago, Harry D. Rindsberg, Production Mgr. of the Cincinnati *Enquirer*, requested the H. Earle Runion Production Engineering organization to prepare an analysis of the *Enquirer's* present mailing operation, and to design a new system that would cope with projected estimates of circulation increases for the future. Increased printing production speed was also made possible by the installation of new high speed rotary presses.

The Cincinnati *Enquirer* had, at the beginning of the assignment, a daily circulation of approx. 185 thousand and a Sunday circulation of approx. 250 thousand. These circulations were entirely handled on a 16 unit black and white press about 25 years old. The mailroom processing at that time was largely a manual operation, the only conveying equipment being a belt conveyor in the center of the room, running to the loading dock (belt conveyor located beyond the exterior well of the building). There were 10 C-H delivery aprons already installed in the mailroom from the 16 existing press units. These delivery aprons could not be moved due to building restrictions and the like.

At the time, a new 14 unit high speed rotary Goss press was being installed and the location of three additional Cutler-Hammer delivery aprons with space for one future Cutler-Hammer delivery apron made it necessary to establish a new mailroom equipment layout plan. An analysis was made of the mailroom operation. With the help of Joseph Walker, Mailroom Supt., and Harry D. Rindsberg, the plan illustrated in this article was found to be most applicable to meet the *Enquirer's* requirements.

New Type of Conveyor

It was on this assignment that the Runion Engineers developed a new type of processing conveyor for mailroom work. The conveyor is a wire mesh belt with a polished surface which will permit the stopping of loosely stacked papers while the belt continues to run without damage to the bottom paper in the stack. Canvas curved sections as illustrated were used to accomplish a loop effect in the conveyor system. Hence the reference name of Closed System.

Straight Line Operation

In most mailrooms, the printed newspapers are delivered by C-H delivery conveyors. These conveyors are routed from the pressroom to any convenient spot in the mailroom. When the press operation starts, newspapers are lifted manually in stacks from the delivery apron and placed on a processing conveyor. The processing conveyor is equipped with work tables which form an integral part of this material handling equipment. As the newspapers move down the processing conveyor in many mailrooms, the workers stationed at the work tables remove the stacked material, with a sliding motion, onto the work table. Here these newspapers are processed into various size packages, placed back on the conveyor which transports them in a *straight line* to an automatic wire tying machine located at the far end of the conveyor line. As the stack of newspapers arrive at the tying machine, an operator places each stack into position for tying, completing the tie by pressing the controls of the machine. When the tie is made, the packages are pushed manually out of the machine into the gravity chute which transports them to the loading dock area. This arrangement of newspaper handling is the Straight Line method. In other words, the material is delivered at one end of the room, processed and removed at the other end of the room.

View of section of modernized mailroom at Cincinnati (O.) Enquirer. Mailroom Supt. Joe Walker is watching Tommy Campbell push a bundle of Enquirers into one of the three new Signode wire tying machines. Between Walker and Campbell runs the new wire mesh processing conveyor. Behind Walker are the aprons leading from the various C-H paper conveyors leading from the pressroom on the floor below. Three new Goss presses can be operated at 55,000 papers per hour from each press.

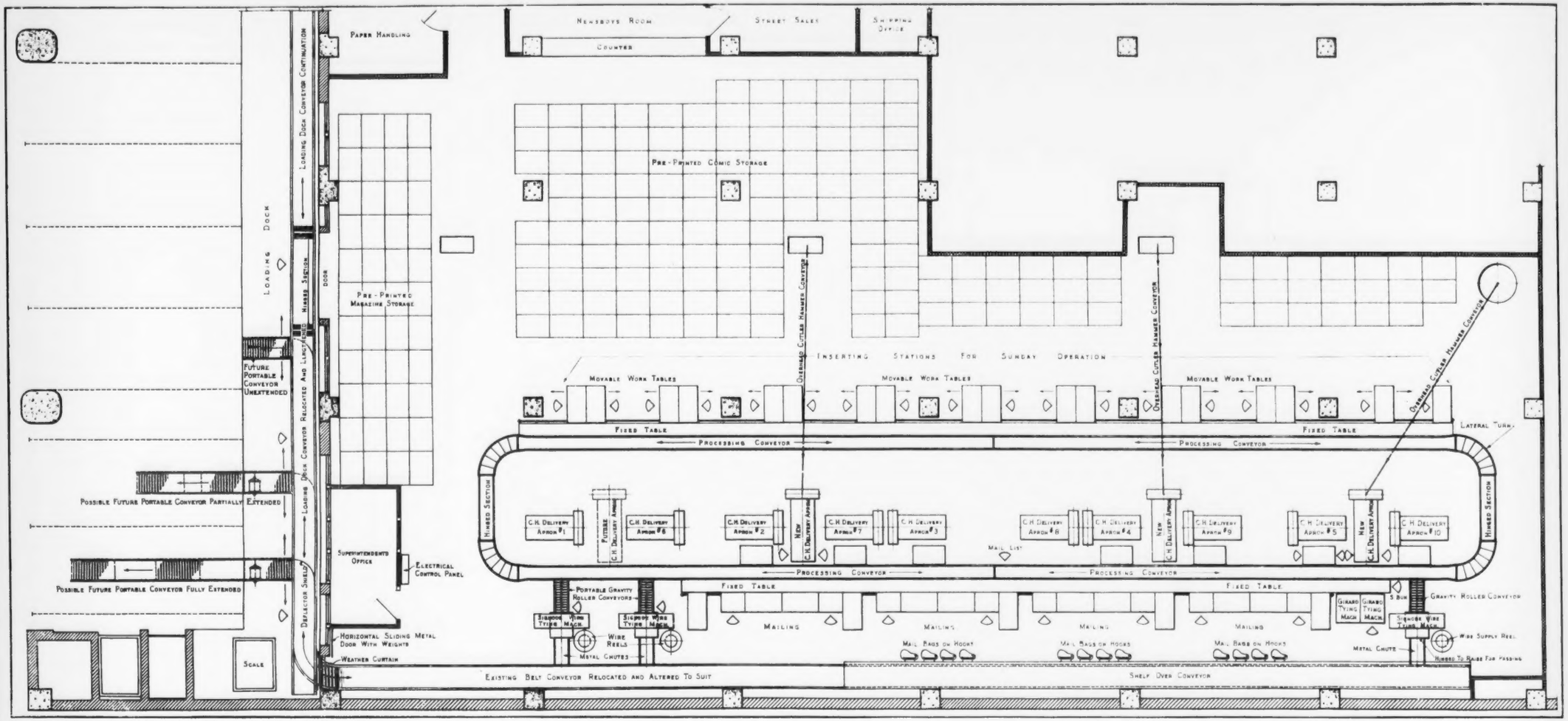
Closed System Operation

The new Closed System installed at the Cincinnati *Enquirer*, though not entirely foolproof, is designed to eliminate some of the problems experienced in the conventional Straight Line principle. Since the Closed System is a series of conveyors designed in a loop pattern, flexibility can be obtained, particularly since all of the conveyors and curves in the loop are separately reversible.

In the diagram, the location of the C-H delivery apron, particularly that serving the high speed presses, is positioned to permit the worker to remove the newspapers from the apron and place them on the wire mesh belt conveyor. If the newspaper run requires processing, the direction of the conveyor travel transports the stacks of newspapers to the workers located along the side of the conveyor. These papers are manually handled in a manner similar to that described for the Straight Line method of processing.

Paper Stacks Go 'round Loop

Should the worker fail momentarily to keep up with production speed, the stack of newspapers is transported around the loop conveyor and back to the worker, giving him a second opportunity to get his supply of newspapers for processing. Such a condition will rarely happen since the number of processing stations is adequate to accomplish any peak production requirement. As the worker completes his processing operation, the newspapers are placed in stacks back on the conveyor which transports them to the wire tying operation. The wire tying machines are equipped with the roller conveyor sections which serve as a bridge leading from the processing conveyor loop. The operator slides the stacked newspapers across the roller into the wire tying machine. After tying, the bundles are pushed onto a conveyor belt



Closed System Daily Newspaper Mailroom Operation

In this diagram is shown the floor plan and equipment layout for the recently modernized Mailroom for the Cincinnati (O.) *Enquirer*. The department floor space is 73½ ft. by 160 ft. The Closed System differs from the so-called Straight Line operation, because in the Closed System illustrated in this diagram, there is a series of conveyors designed in loop pattern. All of the conveyors and curves in the loop are separately reversible. Three Cutler-Hammer paper conveyors bring the newspaper sections to the Mailroom. The three new Goss Presses on the floor below are capable of printing 55 thousand papers each per hr., or a total of 165 thousand copies. The papers are manually handled in a manner similar to that described for the Straight Line method of processing. There are three Signode Wire Tying Machines in the production line. Should one tying machine require a new spool of wire or be shut down for maintenance, all tying is accomplished on the other machines without loss of production time. Working surfaces of all tables are stainless steel. The processing conveyor is a wire mesh belt with polished surface which permits the stopping of loosely stacked papers while the belt continues to run without damage to the bottom paper in the stack. The *Enquirer* Mailroom was engineered by H. Earle Runion Engineers.

that transports them to the loading dock area.

With the wire tying machine located as indicated on the processing conveyor loop flexibility is offered when a wire tying machine is out of service. Should one tying machine require a new spool of wire or be shut down for maintenance, all tying is accomplished on the other machines without loss in production time. The necessity of removing an accumulated backlog of work from the conveyor to the skids or trucks is also eliminated.

Analysis of the mailroom operation took into consideration press schedules which were prepared on the basis of using the existing and future press equipment. These schedules made it possible to establish mailroom manpower requirements for each edition for every day of the week.

The accompanying layout diagram of the Cincinnati *Enquirer* mailroom shows the location of the new equipment that was provided and the relocation of useable existing equipment. General specifications for the new equipment required along with the drawings were prepared in suitable form for competitive bidding. Invitations were submitted to six manufacturers for quotations.

Detail job descriptions were prepared covering each operation to be performed in the new mailroom layout. The estimated cost of the new equipment and the cost of relocating useable existing equipment was also compared with the operational savings to justify the initial expenditure.

Analysis of the Cincinnati *Enquirer* mailroom operations consisted of accumulating sufficient detail data of each edition, showing U. S. mail requirements and the number of standards, key and round bundles, etc., to be handled on each edition. Data sheets were prepared showing the circulation requirements for each edition. With such information, the total manpower requirements were built up from the various edition totals, and all detail data were combined into a press schedule and mailroom manpower schedule showing one complete week's operation. The study included the methods of operation under the existing plan as well as the proposed plan, and new equipment was designed that would fit into the present mailroom.

Joseph Walker, Superintendent of the Cincinnati *Enquirer* mailroom for 25 years, said the new equipment has increased output in his department by 30%.

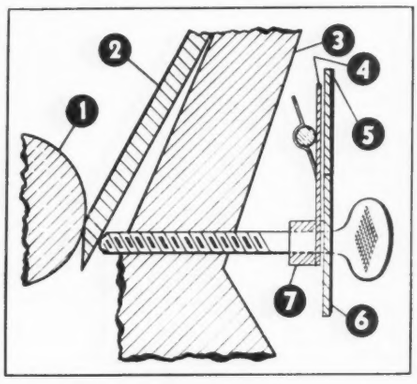


Fig. 1.—Cross section diagram (intentionally not to scale) showing construction of Key-Rite Press Fountain Micrometer Adjusting Device. In the diagram, *1* is the fountain roll, *2* is the fountain blade, fountain frame is indicated at *3*, at *4* is the Key-Rite back plate, *5* is the disk bearing the adjusting screw number, *6* is the calibrated dial, and *7* is the bushing which supports the unit on the fountain screw. There is one of these units for each of the fountain screws.

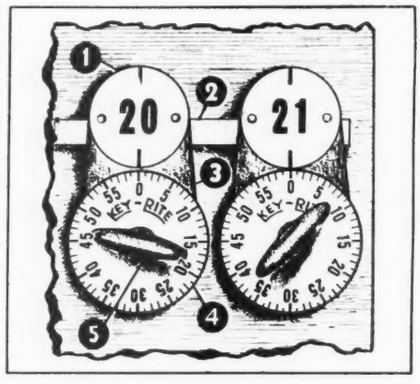


Fig. 2. — Diagrammatical representation (not to scale) of section of front of printing press ink fountain with Key-Rite micrometer key adjusting device. At *1* is shown the dial which indicates the number of the fountain ink flow adjusting screw; *2* is section of steel rod passed underneath a clip on each unit to hold all units on adjusting screws in alignment; *3* is the back or support plate; *4* is the calibrated dial which enables the pressman to secure extremely fine adjustment of fountain key *5* for desired ink flow from fountain to ductor roller. When key is turned, dials 20 and 21 remain stationary.

Press Fountain Micrometer Adjusting Device

THE Key-Rite device for micrometrically adjusting ink fountain blade key screws on offset and rotary letterpress printing presses has been announced by Aids Development Co. The device enables the pressman to control exactly the adjustment of any or all screws in the fountain to secure exact ink feed from fountain to ductor roller.

Advantages claimed for the device are: (1) Faster makeready on solids, (2) Less wear on ink fountain blade and roller, (3) Faster re-run makeready because of the availability of record charts.

The device may be applied by a pressman or maintenance man to any existing press, as well as new presses, in the range from 17 in. by 22 in. up to 50 in. by 76 in. fountains.

As will be seen in the accompanying diagramatic illustrations, the existing fountain blade adjusting screws are utilized. The device itself consists of a separately indexed and graduated aluminum alloy dial calibrated in 60 radial divisions; back of the dial is a back plate (*4* in Fig. 1) at the upper end of which is mounted a stationary disk carrying a number which identifies the number of the fountain adjusting screw; the assemblies carrying the numbered disks are placed in succession across the length of the fountain commencing with the left-hand adjusting screw which is No. 1 and so on for as many adjusting keys as there are in the fountain. Immediately at the lower rear part of the back plate is attached a bushing *7* in Fig. 1. After the unit has been slipped over the adjusting screw, an Allen set screw is tightened to hold the unit rigidly against forward and back movement, but which permits rotation of the calibrated dial itself. Construction of the bushing is such that the back or support plate, *4* in Fig. 1 does not turn when the fountain adjusting screw is rotated through a full or partial turn.

After all of the units have been applied to the fountain adjusting screws, a steel rod is passed under spring clips (shown at the rear of back plate *4* in Fig. 1). This rod holds the dial units against rotation when the fountain screws are adjusted for ink flow.

Endwise movement of the fountain adjusting screw to or from the fountain blade itself, on 24 to 28 pitch screws, is less than 0.001 in. Thus the screw adjustment can be controlled within fine limits.

Furnished with each installation are small charts upon which can be recorded the settings of the adjusting screws. These charts can be filed with data about press runs which pressmen keep in case of reruns of jobs in the future, such as ink and paper stock data, etc.

Ritter Calvert's New President

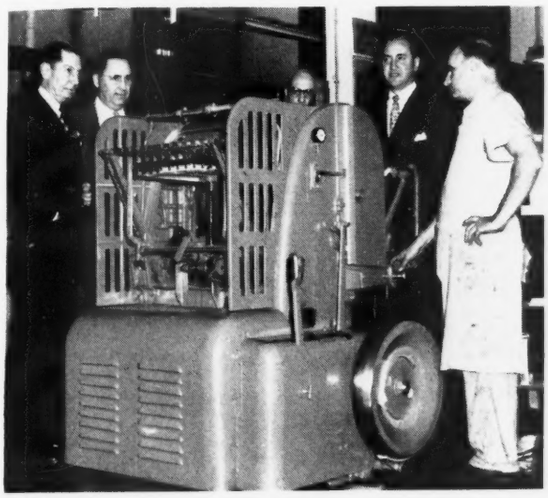
Robert A. Ritter, until recently Executive Vice President of Magill-Weinsheimer Co., Chicago lithographers, has been elected President of Calvert Lithographing Co., Detroit. Calvert has been acquired by a group headed by William H. Sills, Chicago investor. The company was incorporated in Delaware. Prior to World War II, Ritter was engaged in the printing management field as a Consultant to Public Printer A. E. Giegengack. Following the war, he re-entered the consultant field and later became associated with Magill-Weinsheimer. Calvert was founded in 1861. Can and bottle labels comprise a large part of Calvert production. The company still produces bank certificates and maps. Calvert built its home front business among the advertising display and the highly colorful automobile and appliance catalogs needed to sell the products from Detroit factories.

Melting Stereotype Metals Bulletin

GENERAL Electric Co.'s bulletin No. GEA-5453, entitled *Melting Stereotype Metals with Electric Heat*, is illustrated and contains 8 pages, 8½ in. by 11 in. Explained are advantages of electric heat, description and features of Calrod immersion heaters, how to calculate heating requirements, automatic temperature control, panel control equipment and information on converting furnaces to electric heat.

Equipment & Supplies

If you wish additional information concerning equipment, supplies and/or technical literature, please make your request to PRINTING EQUIPMENT *Engineer*, 1276 West Third St., Cleveland 13, Ohio.



17 Thousandth Miehle Vertical — The 17 thousandth Vertical Press produced by Miehle Printing Press and Mfg. Co. was recently installed at the Ringley-O'Brien Press, Chicago. Pictured beside the press from left to right are: W. J. O'Brien, President of Ringley-O'Brien; W. J. McWilliams, Miehle Chicago Manager; Roy Sanger, Ringley-O'Brien Plant Supt.; Carlton Mellick, Miehle Vice President in Charge of Sales; and Russell Zappie, Ringley-O'Brien Pressroom Foreman.

Non-Oxidizing Offset Plate

A NON-OXIDIZING, marble-grained zinc offset plate, designated Prem-Tone, has been developed by Premier Graining Co., Inc. Sponsor claims the plate resists relative humidity, temperature changes and exposure, and the process is equally effective for regrained plates.

It is further claimed that Prem-Tone plates require no counter-etching and can be taken out of the shipping box and immediately wetted down. Normal plate-making procedure is followed after the plate has been thoroughly wet with a soft brush or sponge with ordinary tap water. As a result of using a reduced sensitizing solution in processing the plate, burning-in of image time can be reduced, it is reported.

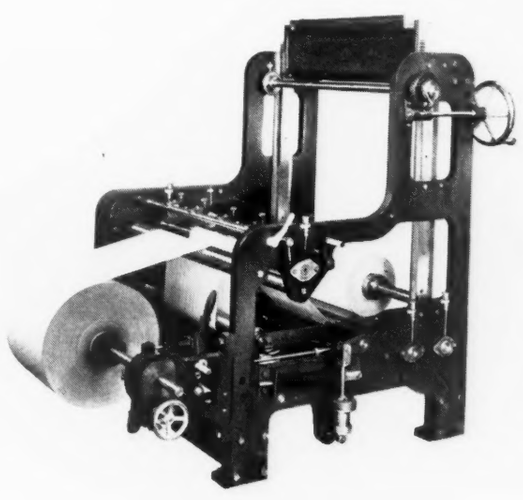
Hartco Spaceband Cleaning Machine

THE Hartco Line-composing Machine Spaceband Cleaner is a hand-crank-operated machine for cleaning and graphiting the wedges and sleeves of spacebands. The device is mounted upon supporting legs which are supplied with casters for moving the Cleaner from machine to machine. Floor space required is about 18 in. by 36 in. It is stated by Hartco Mfg. Co. that a full set of 30 spacebands may be cleaned in 1 min. time.

In operation, a set of spacebands is placed, sleeves up, in the feeder box at the left side of the machine. As the operating handle is turned, the lower spaceband in the pile is released and drops so that the ears or lugs of the sleeve fall into position to be caught by the lugs on the horizontal conveyor chains. As the spaceband is conveyed to the right, metal accumulation at the casting point of the sleeve (if any) is removed by a steel blade. As the spaceband moves along, the long wedge or band is pushed ahead of the sleeve, so that the band is graphited. In the next operation, the band operates the agitator which releases graphite from the funnel. The spaceband is conveyed between stationary and movable spring-mounted blocks for polishing purposes. As each spaceband passes from between the blocks it is stacked on a narrow blade or inclined hanger. The set of spacebands is then removed from the hanger and returned to the line-composing machine.

Manufacturer states that when the spaceband sleeve passes under the knife edge blade for removal of possible metal accumulations, the knife is supported in its holder in such position that the metal adhesions are sheared off but not with a scraping action. The knife blade is operated by a spring and cam which allow it to touch only the spaceband sleeve. After the spaceband sleeves have passed under the knife, they are conveyed a distance of 15 in. between the hardened steel polishing blocks. It is also stated that the machine removes metal accumulations, if any, from the sleeve but is not guaranteed to remove the stain from the casting point.

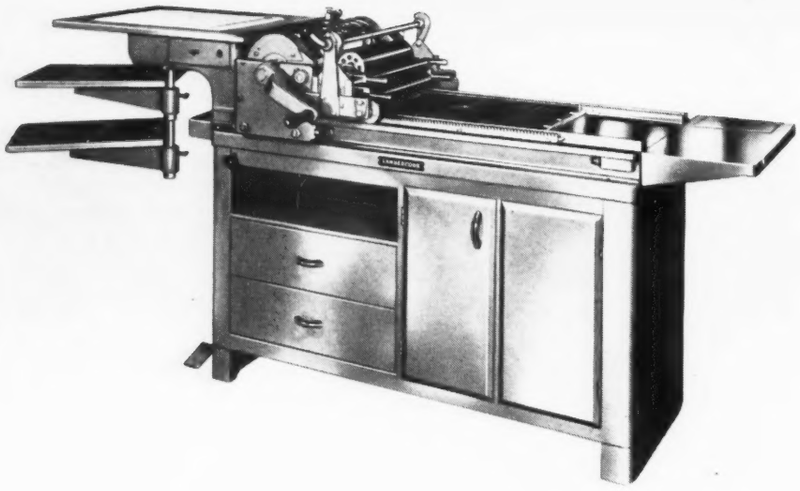
View of Hartco Mfg. Co.'s Line-composing Machine Spaceband Cleaner. It is stated a full set of spacebands may be cleaned in 1 min.'s time. Machine is hand-operated and is mobile to permit rolling from one line-composing machine to another. Width is about 18 in. by 36 in. width.



Slitting and Rewinding Machine — A surface winder designed for slitting and trimming operations has been announced by Orville Dutro & Son, Inc. Sponsor claims the machine holds an almost perfect slitting line so that the rolls are not only tight but are accurately wound. Designed to meet the slitting requirements of small printing plants, the machine is 32 in. wide and will handle rolls up to 32 in. diam. Standard equipment includes motor and controller.

Rutherford Machinery Catalog

ILLUSTRATIONS of equipment designed for both printers and lithographers are shown in a 16 page catalog recently issued by Rutherford Machinery Co., Div. of Sun Chemical Corp. Each illustration is accompanied by a brief description of the machine. Precision color cameras, vacuum printing frames, photocomposing (step and repeat) machines, metal decorating press, plate whirlers, etc., are included in the two-color catalog.



Photoengravers and Electrotypers Proof Press—The Vandercook 215 Proof Press for photoengravers and electrotypers is designed for proofing small plates or forms up to 14 in. by 18 in. in both black and white or color. According to Vandercook & Sons, Inc., the press is equipped with power ink distribution, combined with an inking unit that may be quickly changed for proofing color. Other standard equipment includes micrometer sheet guides, and combination foot operated and automatic cylinder grippers. Specifications: bed size, 15 in. by 35 in.; max. sheet size, 14¾ in. by 20 in.; and floor space, 2 ft. 6 in. by 8 ft. 4 in.

Paper Packaging Machine

THE Model E 1951 Morpac Paper Packaging Machine wraps or bands ream paper, pads, tablets, loose leaf fillers, hard or stitch bound books, etc., from 5½ in. wide by 7½ in. long by ¾ in. high up to 10 in. wide by 15 in. long by 5 in. high. One operator feeding the machine can produce 1000 completed packages per hr., claims the sponsor, Packaging Machine Div., Lynch Corporation.

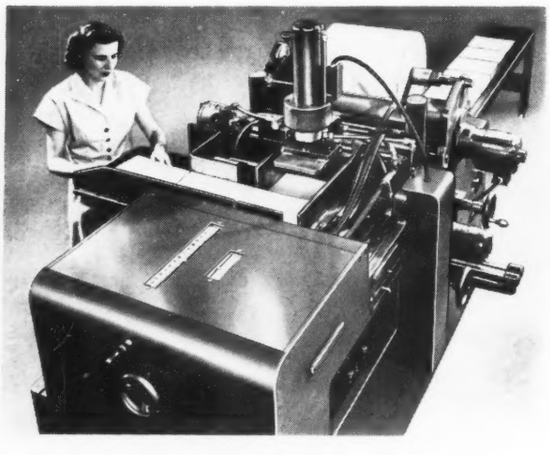
It is also claimed that a changeover from minimum through maximum sizes takes less than 15 min. Glue pots are removable for cleaning. Heater units on each glued seam for setting of liquid adhesive if desired. Standard equipment includes separate motors for each glue wheel and an adjustable seal table.

The improved model's delivery chute has been lengthened to permit longer package dwell for end flap sealing at minimum temperatures. Other features include adjustable braking action on seal table from within and an 110 v. inspection lamp inside the frame. Specifications: shipping weight, approx. 4500 lbs.; overall dimensions, 69 in. wide by 127 in. long by 69 in. high; power requirements, 60 cu. ft. air per min. at 60 lbs. gauge pressure, 220 v., 1 phase, 60 cy., 3 kw. a.c. current.

Improved Halftone Methods

A BULLETIN in which is described two new methods of making halftones with Kodak Magenta Contact Screens has been prepared by Eastman Kodak Co. The methods discussed in the bulletin are termed the controlled flash and highlighting techniques.

With the controlled flash method, a main exposure is made through a Kodak Magenta Contact Screen with white light alone. Since this exposure for most originals will not provide enough exposure in the shadows of the negative to produce a satisfactory shadow dot, a flash exposure is then used to bring the size of the shadow dot up to the correct size. The highlighting method using controlled agitation employs still development and a highlighting exposure made without a screen. Contrast is controlled by varying the flash exposure, explains the bulletin.



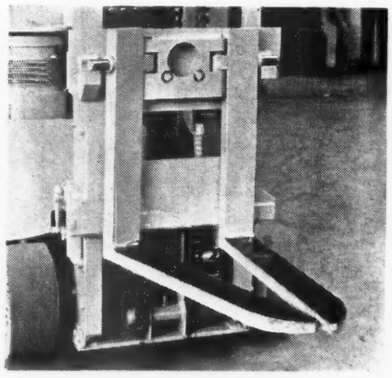
Improved Morpac Paper Packaging Machine for wrapping or banding ream paper, pads, tablets, loose leaf fillers, hard or stitch bound books, etc.

Pivoted Fork Tines

VERTICALLY pivoted forks for use on high-lift power industrial trucks have been developed by Elwell-Parker Electric Co., to meet requirements in congested areas. The device is furnished as an integral part of some models of Elwell-Parker fork trucks, or may be supplied as an attachment for standard model fork trucks. The tines are used either in the ordinary way or may be adjusted for unusual conditions relating to size or position of the load.

With either adjustment it is not necessary for the truck and pallet to be in alignment as a preliminary to lifting or depositing a load. The truck may approach and handle a load at an angle of as much as 45 deg. from parallel, depending on length of tines and width of pallet.

The head of each tine is fitted with two cross-members supported horizontally in a fixture bolted to the base plate attached to the truck's elevating mechanism. The inner cross-member is held in the fixture by means of a vertical pin forming a hinge, and under tension of a spring. The outer member is a short length of steel bar and normally rests in a contoured flange welded to the base plate. The tine is adjusted by moving it sideways, spring tension holding it in position pointing either inward or straight ahead. All parts are made from forged alloy steels. Further information may be obtained by writing *Printing Equipment Engineer*.



Elwell-Parker vertically pivoted forks for use on high-lift power trucks where loads are maneuvered in congested areas.

Vinyl Paper Coating

GATES Engineering Co. reports that Gaco Vinyl Paper Coating may be applied with conventional roller coat or spray equipment and may be either force-dried or baked. Gaco may be used for coating stock menus, labels, tags, point of sale displays, book covers, sheet music, truck panels and outdoor posters. It is applied in the same way as lacquers and varnishes. Gaco is said to be impervious to alcohol, citric acids, boiling water, coffee, tea, fats, lubricating oils and greases. After application, it is claimed, fold, tear and bursting and tensile strengths are increased. A bulletin is available upon request.

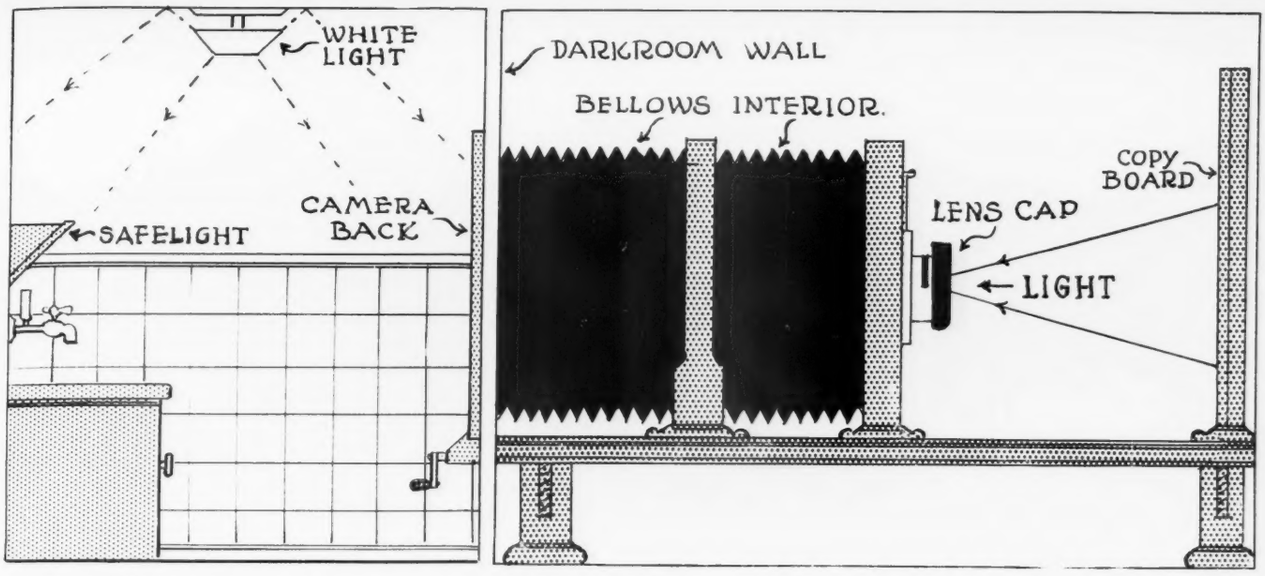


Fig. 22a.—This diagram represents appearance of the darkroom and gallery surroundings in relation to the light-tight interior of the camera bellows.

The ABC of OFFSET

For Letterpress Printers

By George Jos. Lenzer

XI—THE DARKROOM

NO CAMERA assembly is complete without its light-tight box or chamber in which the first physical phenomenon or photographic function takes place. It is here that the action of light is caused to begin the physical changes which occur in the creation of the latent image of an object within the light-sensitive material, coating or emulsion of a photographic plate or film. (Figs. 22a and b).

The intensity and brilliance of the energizing light rays permitted to strike the light-sensitive material is controlled at the lens by the diaphragm, iris or stops. To obtain the best negative possible, it is essential that all space surrounding the light-sensitive material be free of any or all light except that light which is admitted through the lens (Fig. 22b).

All of which means that the light-sensitive material must be surrounded by absolute darkness or the absence of light of any kind, white or colored.

Whether by a hand camera, movie or reproduction process camera, before the exposed film or plate can be processed into a permanent image, another light-tight chamber must have been previously prepared and made ready for use. This chamber is called the darkroom (Fig. 22).

With reproduction process cameras of the darkroom type, it will be remembered that the darkroom is an integral part. (See Chap. VI, June 1950, *Printing Equipment Engineer*, Fig. 10, and Chap. IX, November 1950, *Printing Equipment Engineer*, Auxiliary Camera Backs).

It has been shown by the law of inverse squares (Chap. X—Light, Dec. 1950, *Printing Equipment Engineer*), that as the intensity of light is diminished inversely to the square of the distance light must travel, the intensity of illumination is proportionately reduced. Where the entrance of light is effectively and completely stopped, the resulting effect is absolute darkness or the absence of light.

To many people, darkness and the absence of light is synonymous with black. This misconception frequently results in unreasonable demands that the walls and ceilings of darkrooms, galleries and related processing rooms be painted a dull, matte black. Many instances of this and other misconceptions have been found by this writer, who feels that a brief discussion of the darkroom would not be amiss.

Planning the Darkroom

In planning the darkroom for process reproduction, it must be remembered that no two darkrooms are alike. (See Figs. 10c, f and g, Chap. VI, June 1950, *Printing Equipment Engineer*.)

The following factors must be given serious consideration before any planning is undertaken:

1. Location.
2. Style or type of camera.
3. Darkroom space required.
4. Permanence of installation.
5. Production requirements.
6. Illumination and wiring.
7. Ventilation.
8. Temperature controls.
9. Painting and finishing.

1. Location

In deciding the camera and darkroom location, it is important to consider the year round temperature and humidity.

The ideal processing temperature is 68 deg. F., with a room temperature range of 65 deg. to 75 deg. F., which must prevail through winter and summer. At temperatures higher than 75 deg. F. developing solutions will oxidize more rapidly, thus lessening its useful life and tending to cause staining. Comparatively lower temperatures will cause the developer to act more slowly, which affects the contrast adversely.

A good darkroom should be as dry as possible. Relative humidity of 70% or higher will cause equipment to rust and corrode. It also results in longer drying time for negative plates and films. Photographic emulsions, and some chemicals may absorb moisture from the atmosphere, resulting in ruined and useless materials.

From the foregoing facts it is evident that desirable locations will not be found in damp cellars or basements, nor in uninsulated attics or top floor lofts, because of their disturbing effects upon the necessary conditions imposed by processing

requirements of chemical solutions and running water within the darkroom.

If excessive dampness is unavoidable in the place to be occupied by the camera equipment and the darkroom, additional problems of storage and moisture control must be solved.

Moisture control can be partly met with calcium chloride drying units which can be obtained commercially, and by water-proofing walls and floors which will help to reduce the moisture content of the air.

Materials storage must be figured as a twofold problem. Sensitized materials (plates, films and papers) should be stored in moisture-proof and light-tight cabinets which should be apart from the chemical storage cabinets and compounding tables, particularly where bulk chemicals are weighed out. This precaution is necessary because it is possible for extremely fine particles of chemical dust to float through the air and settle on the light-sensitive materials. These dust particles on films and plates may cause pin-holes and other defects in the negatives and positives.

Chemical storage cabinets should also be equipped with calcium chloride drying units or units of silica gel in order to reduce atmospheric moisture content to a minimum inside the cabinet.

Proximity of water supply, drainage and electrical facilities are important considerations in the selection of a location for the camera installation, darkroom and chemical compounding station which should be situated outside the darkroom.

It must be remembered too, that the more extensive the plumbing and wiring required, the more expensive the installation becomes. Therefore, the cost factor rules out an indiscriminate and thoughtlessly installed system. Concentrating these facilities in one continuous direction and location will assure better and increased production.

2. Style or Type of Camera

The floor plans and layout of sinks, shelves and storage cabinets, light tables and other equipment is dependent upon the style or type of camera installation. Referring to (Figs. 10 c, f and g), it will be noted that there are three distinct styles of darkroom camera installations, having direct bearing upon the size of the darkroom.

Turning to (Chap. IX, p. 54, November 1950, *Printing Equipment Engineer*), entitled *Auxiliary Camera Back*, it will be found that the darkroom will need to be of greater depth for the effective installation of this equipment, with any of the darkroom cameras illustrated in Fig. 10.

3. Darkroom Space Required

An average walking step measures approximately 30 in. Distance to be travelled by the camera operator from the copyboard to the processing sinks and trays should be figured at two 30 in. paces plus 12 in. additional.

This distance of 72 in. should be determined as the safest width of the walking aisle running parallel to the sinks and processing equipment. To the recommended 72 in. aisle must be added an additional 12 in. for each 12 in. the camera bed or chassis extends into the darkroom.

Width of the darkroom should be based upon the same 30 in. walking step. The distance from the inner door connecting the darkroom with the light baffle chamber, to the near side of the camera back, should measure 72 in. This area should be kept free of any obstructions which may hinder either the entrance or exit of the operator. At the other end of the darkroom an aisle of approx. 48 in. from the far side of the camera back, should run parallel to the cabinets and shelving lining the end wall.

4. Installation Permanence

The camera is essential to the production of photographic reproductions, and of equal importance is the darkroom where the photographic reproduction is chemically processed.

The initial expenditures for photographic and darkroom equipment and installations are too great to be treated lightly. It cannot be stressed too strongly that when such equipment is installed, it should be done on a long range basis rather than one of temporary nature.

If installation of photo reproduction equipment is deemed to be economically sound, then it should be done with a view to expansion and growth of the department.

Allowances for additional space should be provided for, rather than a limitation to the minimum requirements for the actual installation. When departmental expansion becomes necessary, then the addition of new equipment can be accomplished at a relatively lower outlay of expense.

Planning for future needs, means permanence in all installations.

5. Production Requirements

Where work is small in nature, it is logical to assume that all necessary equipment must be no larger than needed to accommodate small work. The darkroom, however, should be planned to accommodate increased production in processing procedures and operations. This means, that as camera production is increased, adequate chemical processing facilities will be available to handle the increase efficiently, so that no bottlenecks will result.

Planning camera equipment and darkroom facilities is dependent upon other factors which are all too frequently overlooked or ignored. These are primarily the pressroom equipment and production loads. If the runs are short and plate changes are frequent, this factor must be

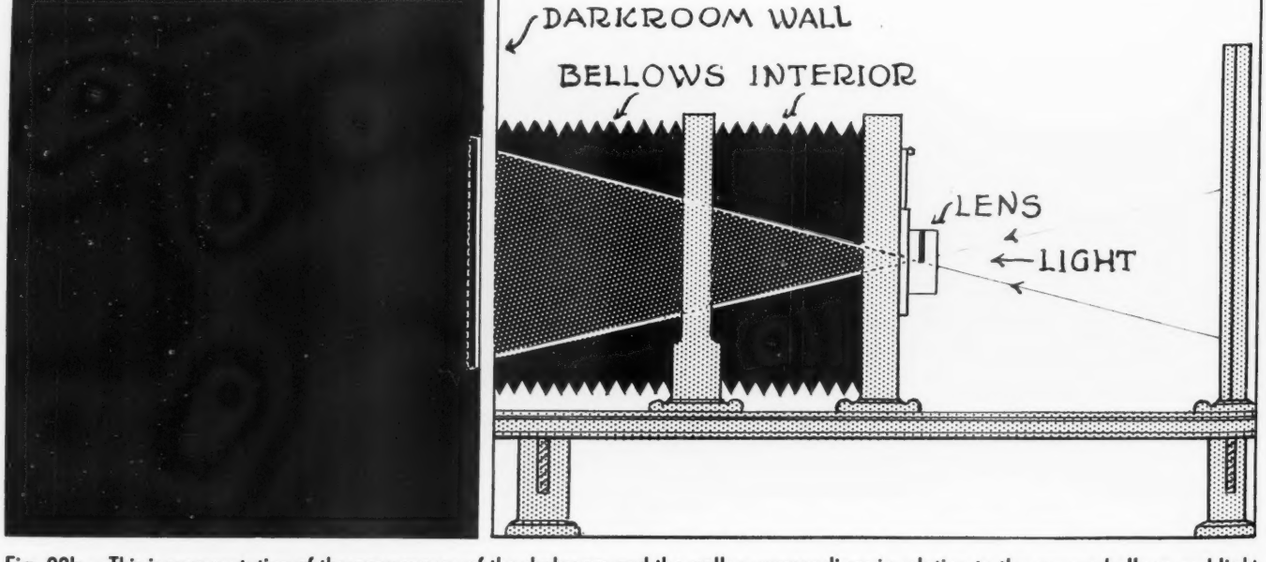


Fig. 22b.—This is representative of the appearance of the darkroom and the gallery surroundings in relation to the camera bellows and light transmission during exposure.

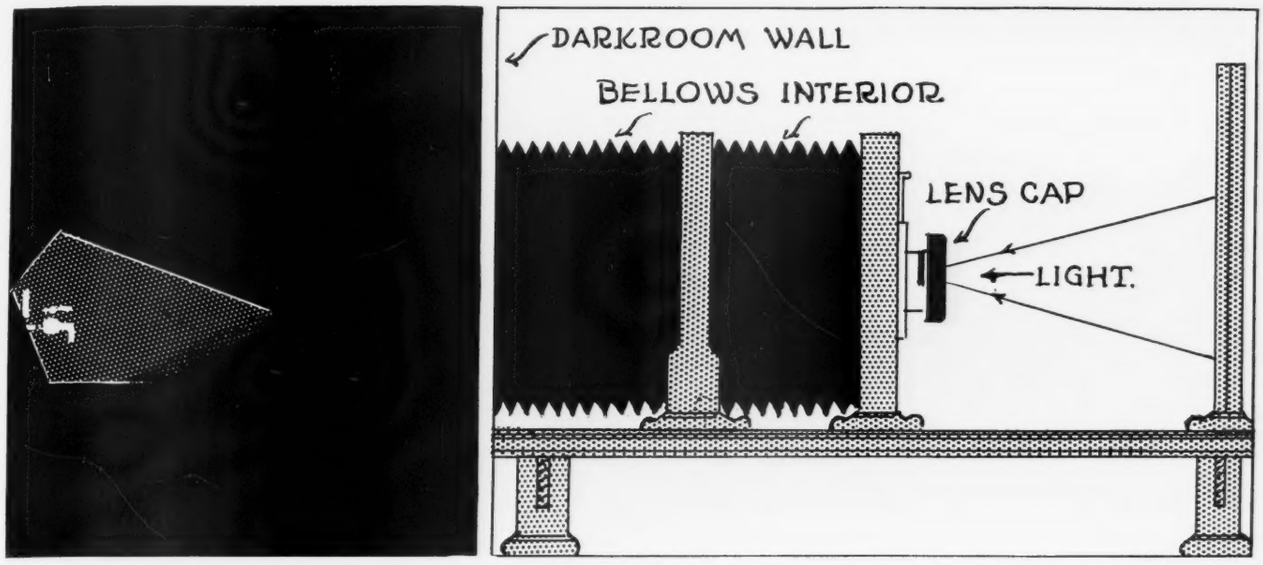


Fig. 22c.—Diagram indicates the appearance of the darkroom during chemical processing operation with safelight illumination.

taken into account. The press and plate size is also a determining factor. Sheet size of paper most generally converted and printed, with the approximate 'number up' on each sheet, must not be overlooked in planning for the camera department needs.

A general average number of negatives or positives needed for imposition and plate making is of greatest concern. In this regard it is necessary that a great deal of factual production data be previously compiled.

Camera production capacity depends primarily upon the maximum work sizes of the reproductions in relation to the press, plate and finished paper sizes as well as the potential production schedules.

Regardless of camera size, the darkroom must be of such size as to be capable of accommodating sinks, trays and other equipment of greater capacity in order to efficiently handle increased camera production when that equipment is operating at peak schedules.

From the foregoing, it is evident that the production potential is vital in planning the darkroom and its anticipated output.

Before construction of the darkroom is begun, or a wiring diagram is made, it is well to check over a list of immediate and possible future equipment such as:

Safelights	Densitometers
White lights	Electric agitators
Ventilating systems	Electric driers
Foot switches	Clocks and timers
Negative Viewers	Light tables
Cooling coils	Heating elements

Practically all modern darkrooms are fitted with the foregoing items and many more. Every darkroom will contain:

a. White ceiling lights.
b. White lights over the sink and developing trays.
c. Safelights over the developing trays.
d. Outlets for several extra pieces of equipment.

Good planning will have the current coming into the darkroom, passed through a master switch located at the door. Throwing this control when leaving the darkroom will eliminate any danger of leaving anything turned on by mistake.

Extreme danger can result from makeshift wiring, and overloaded power lines by the use of loose cords and 2, 3, or 4-way plugs. All wiring should be done by a licensed electrician, who should also be cautioned to use moistureproof cables and fixtures.

Safelights—An ideal safelight fixture is one which provides sections for at least three different color filters and one white light section (Fig. 22a and c). What color filters will be used is determined by the kind of material to be employed, its sensitivity to light and color, and other peculiarities.

Films and plates for process work are of two general sensitivity classifications, Orthochromatic and Panchromatic. Since the orthochromatic emulsions are insensitive to red, these materials may be processed under a red safelight such as an Ansco A7.

The wide range color sensitivity of panchromatic films and plates makes it advisable to process these materials in total darkness. (Fig. 22b.) Sometimes the indirect illumination of a dark green filter can be used with panchromatic materials, but because the illumination provided by such a safelight is of such poor quality, it is better to do without it, thus avoiding the ever-present possibility of fogging the material.

Each manufacturer of photographic materials supplies specific instructions as to the safelights to be used (Fig. 22c). It is best to heed these recommendations and use the specifically recommended filters only. Don't take chances and use colored cellophanes or other similar materials simply because they seem to be of the proper color or density. The amount of complementary light passed through such makeshift filters can cause irrepairable damage to the negative or positive.

Despite all discussion of lights and safelight illumination inside the darkroom, the chamber should live up to its name, and when properly closed and unlighted it should be absolutely dark (Fig. 22b).

Frequent checks for light leaks are necessary and essential to most efficient production.

7. Ventilation

In planning the darkroom, several vital factors must be considered; the health of the operator is essentially the first consideration; protection of the light-sensitive material is second and adequate working space, the third.

Each of the above mentioned factors is directly or indirectly affected by the many variables concentrated inside the darkroom. These variables must be overcome or controlled if efficient production is to be assured.

In sealing the darkroom against light leakage, even to the smallest pin-hole, all possible sources of necessary ventilation is sealed out. This means that some form of air conditioning or control must be included in the plans.

How the system is to be installed is dependent upon the size of the darkroom, the number of people working in it, the type of construction and finish, and the length of time the system will be used.

A blower type ventilator should be installed near the darkroom ceiling to remove stale air and chemical fumes. A fresh air duct, preferably a blower type air filter should be provided near the floor, especially if there are more than one person working in the room simultaneously.

8. Temperature Control

Meaning of the term, Temperature Control, now under discussion refers to the water supply and recommended proc-

essing temperatures of the chemical solutions, and not to the room temperature which has been previously mentioned.

Since the manufacture of photographic materials is under constant control approaching a nearly perfect or ideal condition, an approach to a nearly similar ideal condition must be made when planning the darkroom.

Because most photographic formulas require a recommended 68 deg. F., and sustained temperatures of 65 deg. F. to 75 deg. F., it follows that tray heating and cooling devices must be utilized.

Variable temperatures of raw tap water, either hot or cold, are too great to trust to the fingers and touch systems of determination. When specific water temperatures are required, a thermostatically controlled mixing faucet is a must.

Greater variations than the allowable or recommended temperature range will invariably result in trouble which may become very costly and difficult to correct. Some of these troubles may never be discovered until after the printing plates are made, and sometimes never until the job is on the press and partly run.

Certainly, temperature controls are too important to be treated lightly when planning the darkroom.

9. Painting and Finishing

It is a known fact that light and color are representative of life. Black on the other hand, is morbid and depressing in its effect upon life and surroundings except when it serves as a complement to emphasize some other color or feature by its intense contrast to light and color.

Any black material will absorb visible light, and will effectively conceal certain kinds of dust, dirt and filth which is made apparent on any white or colored surface, even to the tiniest speck.

Because of the light absorbing qualities of Black, the only place where this quality can be used to its best advantage is on all interior surfaces of the camera bellows between the lens and the light-sensitive material. (Fig. 22a.)

Painting and finishing the darkroom walls and floors should be determined by the following:

1. The safety of the operator.
2. The creation of pleasant working surroundings.
3. The facilitation of easy to clean surfaces with incentives to good housekeeping practices.

It must be remembered that when a properly built darkroom is closed and sealed against light, the interior of the darkroom is dark (Fig. 22b); there is no determination or recognition of either white or color and a safelight is safe, regardless of the surroundings or colors (Fig. 22c). If the darkroom is to be painted, no matter what color is selected, there is absolutely no good reason to choose black.

The ceiling and side walls can be painted a pleasant light green down to a point about 6 ft. from the floor. Unglazed tiling or a light colored linoleum can be used to finish the darkroom walls to a height of six feet from the floor. White can be used with equal safety, if it is not glossy. All fixtures, sinks, cabinets, shelving and furnishings should be painted a darker and harmonizing shade of the selected finishing color (Fig. 22a).

Because of the danger of slipping and possible injury to the operator due to spilled liquids on the floor, the flooring should be carefully considered.

Here, hard, smooth surfaced flooring should be avoided. If the floor is originally of concrete construction, then a wooden floor should be overlaid, with an air space between. The wooden floor should be covered with a resilient cork compounded battleship linoleum of any suitable color, and should be sealed against leakage at the wall base.

When completed, a well equipped and convenient-to-use darkroom is a good investment, and a source of satisfaction and pleasure to the workman. Any competent camera operator prefers the best equipment and working conditions under which he does the best work.

So plan the best darkroom possible—and you will be well repaid in better workmanship and greater production.

(To Be Continued)

EXECUTIVE Qs

William R. Turner has been appointed a sales representative for Intertype Corporation's Southern District office, according to A. T. Mann, jr., Vice President. Turner will cover newspaper and printing establishments in Arkansas and Tennessee. Previous to joining the Intertype firm in 1949, he held various mechanical positions on the Miami (Fla.) Herald.

According to an announcement by Vulcan Rubber Products, Inc., Edward C. Hemes has been appointed General Manager and James H. McGourty has joined the firm in a sales capacity. Hemes, who previously was manager of the gas meter diaphragm division of the company, has been with the Vulcan organization since 1946. He is a graduate of the University of Wisconsin. McGourty has been associated with the Superior Meter Co. as East Coast sales manager and director of labor relations.

Fred E. Broling, promoted to the newly created position of Chicago Metropolitan Branch Sales Manager for Harris - Seybold Co. The appointment was announced jointly by Ren R. Perry, General Sales Manager, and Cal A. Loefgren, Western District Manager for the company. Broling will be responsible for the activities of H-S salesmen in Chicago proper and the outlying territories usually considered part of Metropolitan Chicago. For the past several years he has represented Harris-Seybold in the Chicago and Milwaukee areas.

Norton T. Steed, appointed New England Manager of Miehle Printing Press and Mfg. Co. Since World War II, Steed has worked out of the Miehle New York office. He succeeds Ralph J. Waite who recently retired after 40 years service with the Miehle company.

Peter Rice has been appointed General Sales Manager for the Printing Machinery Div., Electric Boat Co. Has been with the company since formation of the Printing Machinery Div.

Frank N. Kelly, Asst. Treasurer, Electric Boat Co., appointed Manager of the Printing Machinery Div., according to O. P. Robinson, jr., Vice President and General Manager of the Groton Plant.

James J. Walsh, Research Engineer for the W. F. Hall Printing Co., Chicago, passed away on Sunday, December 3 from coronary occlusion. He is survived by his widow, two daughters and six sons, James A., Edward R. and Harry J.

are pressmen for the W. F. Hall Printing Co. Leroy K. is a machinist for the Chicago Cuneo Press. Most of James J. Walsh's life was spent as a letterpress pressman. He accomplished a number of research and development projects. One was pre-makeready of printing plates, printing plate routing with needle-point routers to reduce hard edges and hand tooling. He was one of the first to use rubber press packing and rubber ink rollers to improve quality, increase production and to reduce makeready time from the small proof press to the giant magazine and catalog presses. He is said to have originated composition ink roller coatings, the double coat for dividing the roller into sections for colors without cutting into the composition. He designed the first gas mixer and enclosed oven style of web ink driers. He is credited with having made the first air angle bar for rotary web presses.

William Gegenheimer, 78 Roebling St., Brooklyn, well known in the Graphic Arts industry as an offset press engineer and as director of his own business since 1918, recentlyannounced he is being joined by his son, Harold W. Gegenheimer, formerly Division Mgr. of the Electric Boat Co.'s Printing Machinery Div. Harold Gegenheimer will continue his connection with E.B.CO in the capacity of consultant.

Prior to designing the E.B.CO offset press, he spent many years in the lithographic equipment field. He collaborated with his father in designing the original Willard offset press, now the E.B.CO.

ARC Nurses Serve

More than 900 Red Cross nurses served in 80 disaster relief operations last year.

THING TO FEAR IS FAILURE

(Abstracted from address of Charles F. Geese, Special Consultant, Time, Inc.'s Springdale (Conn.) Laboratories, before Intl. Craftsmen's Offset Clinic, Chicago, September 1950.)

SOME of you and many of the men working under you are asking: "What will research do to me and my job?" We think the answer is clear. Graphic Arts Research will enable you to do a better job; it will increase job opportunities and will create many new jobs. It is lack of progress which destroys industries and jobs. The thing to fear is failure to move ahead.

Graphic Arts Exposition Financially Successful

The Board of Directors of National Graphic Arts Expositions, Inc., met Thursday, December 12, Lake Shore Club, Chicago. President A. E. Giegengack presented his statement to the board. Upon conclusion of the statement, and among other actions, the board allocated $28,500 to the Educational Fund of the Intl. Assoc. of Printing House Craftsmen, Inc. The board also found that the corporation had operated more economically than thought possible when its budget was approved. As a result, refunds to exhibitors in the amount of $42,870.52 were authorized.

The board was highly complimentary of the work done by President A. E. Giegengack, Treasurer S. F. Beatty, Treasurer Edward Christensen, and Asst. to the President Russell H. Herrell.

Zinc Order Issued

BEGINNING January 1, 1951, the use of zinc plate stock by photoengravers (over 3 thousand lbs. in any calendar quarter) is restricted under the terms of Zinc Order No. M-15, issued by National Production Authority, U. S. Dept. of Commerce, Washington 25, D. C. The purchase and inventory of zinc was regulated starting with the date December 1, 1950. However, those engravers using less than 3 thousand lbs. of zinc are permitted to use up to 3 thousand lbs. in any calendar quarter beginning January 1, 1951.

Those firms which have in the past, and in the future, will use more than 3 thousand lbs. of zinc in any calendar quarter are restricted as follows: During the calendar quarter beginning January 1, 1951, and each calendar quarter thereafter, the use of zinc is restricted to 80% of the average quarterly number of pounds of zinc used during the base period—that is, the two quarters of the six months ending June 30, 1950.

A flexible provision has been made in the Order M-15 for the use of zinc by months in any calendar quarter. The phrase referred to reads as follows: "Provided, however, that his (the photoengraver's) use of such items in any one month shall not exceed 40% of the permitted quarterly use."

Provision is also made for practical minimum working inventory which is taken to mean the smallest quantity of zinc from which a person can reasonably meet his deliveries or supply his services on the basis of his currently scheduled method and rate of operation within the restrictions of Zinc Order M-15. In the order, inventories of zinc are limited to a 45-day supply, or to a practicable minimum working inventory—whichever is less.

Restrictions on receipts of zinc, excessive inventory and requirements for keeping records for at least two years are provided for in the order.

Shulman Folder and Plant

Ben Shulman Associates, Inc., has prepared an eight page, two-color folder in Spanish for Central and South American newspaper publishers and printing plant owners. The folder outlines the sales and technical service offered by the organization and contains pictures and information concerning key personnel in the Shulman firm.

According to Ben Shulman, President of the company, a plant has been acquired by Ben Shulman Associates located at 45-14 51st St., Woodside, Long Island, N. Y., which is to be utilized as a showroom, rebuilding work shop and warehouse. The showroom will display rebuilt and used Graphic Arts equipment.

Shulman also announced the appointment of Leslie C. Kendall as Director of Sales for the Original Heidelberg Press in Greater New York and New York state. Kendall previously was New York sales supervisor for Brandtjen & Kluge, Inc.

Excellent Paper

Cranston Williams, jr., son of Cranston Williams, ANPA Manager, graduated in August 1950 with the degree of B.E.E. (electrical engineering, electronics option) from the University of Virginia, Charlottesville, Va. His graduation paper is entitled *Xerography* and was published in the October 1950 issue of the *Virginia Engineering Review*. The paper is prepared in compact and informative manner. This paper along with a detailed paper on Xerography has been filed in the Virginia Engineering Library. At present, Cranston, jr., is attending the Wharton Graduate Business School at the University of Pennsylvania. He plans to enter newspaper work.

Scraping Mitt

By W. F. SCHAPHORST, M.E.

SCRAPS of window screen can be utilized for scraping soot, scale, rust, dirt, and the like from surfaces on which such matter has attached itself. Everybody is familiar with steel wool and its use for scraping and cleaning. Window screening can be made to serve the same purpose. One way, if the sheets of screen are large enough, is to make a mitt into which your hand is thrust, and you can then go after the adhering matter with telling effect. You may not like to get your hand dirty but you can do a better job in that way because you can feel the surface with your fingers through the wire screen and even through a cotton glove that can be worn inside the wire mitt, if desired. For places that cannot be reached by hand, tack a wad of crumpled-up window screen on the end of a stick and use that as a scraper.

Collotype Printing Process

By THOS. D. HOOK*

**Vice President, Black Box Photo & Collotype Studio, Chicago. Abstract of address delivered before Photo-Gelatin Clinic, Intl. Assoc. of Printing House Craftsmen, Stevens Hotel, Chicago, September 1950; also brief report of Question and Answer Period following Mr. Hook's address.*

THE Collotype Process has been adapted to the printing of art calendars, postcards and greeting cards. Many fine frontispieces and illustrations in fine books are printed in Collotype. Sales portfolios, sales presentations along with dealer or jobber catalogs, reference books or catalogs with a complication of illustrations lend themselves to Collotype. In recent years a great quantity of blow-ups have been reproduced in monotone, duotone and full color by Collotype. Reproductions of magazine ads are suitable Collotype jobs, as well as counter, wall and floor displays. Possibly this field constitutes the major type of Collotype printing today.

The Collotype printing process produces fine printing in monotone, duotone or full color, in short runs . . . The minimum quantity of reproductions is 100, while the maximum quantity is about 5000. The size of the desired printed area is a determining factor in the maximum quantity. The largest continuous tone area that can be printed on a single sheet is 42 in. by 61 in. . . . An example of the economy can be explained by indicating that often 3, 4, or even 5000 full color sheets can be completely processed and printed for the cost of offset separations and plates. This example is based on fine quality reproductions in either offset or Collotype.

Basically, a Picture Process

Because Collotype is basically a picture reproducing process, some of its finest work is produced from Kodachrome. Flexichrome, Ektachrome and dye transfer originals.

Oftentimes test runs in Collotype make a fine and most economical medium for securing public reaction to material for retail sales. This procedure is used by greeting card manufacturers before expensive plates are made for long runs.

When is a job suited to Collotype? There are three basic factors to be considered. Any job that meets these requirements cannot be more beneficially reproduced any other way.

First Factor is the amount of picture area, large areas of picture value. This includes large areas of fine, delicate tones, large areas of continuous tone.

Second Factor is quality. If the requirement is for quantities from 100 (any size) to approx. 5000 (large sheets size 44 in. by 62 in.).

Third Factor is economy. Many a job has been run in monotone, duotone or full color by other printing processes when greater quality and economy could have been delivered by Collotype.

We often use this maxim as a yardstick of comparison of cost of Collotype over fine letterpress or fine lithography: "The shorter the run and the greater the picture area the greater is the difference between Collotype costs and lithographic costs." Basically, Collotype is not competitive to other printing processes, because Collotype fits a printing requirement that cannot be economically met by any other printing medium. Any job that does not fit the three basic factors previously mentioned should be run in some other process.

Thos. D. Hook

Mechanical Aspects

The initial step in Collotype printing concerns the copy and photography. The copy for Collotype printing can be prepared similarly to the way it is prepared for offset. If the originals are photographs, they ought to be soft and full-toned. Negatives for Collotype printing must be made the right density to fit the emulsion on Collotype plates, and the emulsion on a Collotype plate compares in value to the emulsion on a normal sheet of photographic paper. If a full color job is in progress a set of separation negatives is required. It is possible to print in full color Collotype from black and white art work by using color overlays. In practically all cases, the negatives are retouched with a needle point pencil and by stump with French crayon. Best results are obtained by retouching because whatever retouching is done on the negatives to improve their quality will be transferred to the plate. Once the plate is exposed from the negatives nothing can be entirely taken out, nor can anything be added.

After the negatives are made and retouched they are stripped on masking paper. All the negatives and type matter are mounted face up because they appear in reverse on the printing plate. Inasmuch as Collotype is direct printing (the paper kisses the plate) the impression is taken from the plate to the paper.

Platemaking

The next step is platemaking. The gelatin is dissolved by mixing with the correct amount of water and heating. The gelatin begins to dissolve at 108 deg. F. Bichromate of potassium and bichromate of ammonium (dissolved) are added to the gelatin and water at approx. 120 deg. F. This solution is cooked until it reaches a temperature of about 150 deg. F. The solution ought to be run through a centrifuge to purify the gelatin and remove all imperfections such as fat. However, this procedure is not always followed.

Collotype plates are aluminum. The plates are dry-grained just enough so that the emulsion will adhere to the plate. These plates last indefinitely because after the plates are printed they are placed in a tank and the old emulsion is soaked off and the plate is cleaned and recoated.

Coating the Plate

A clean plate is fastened in a vertical or horizontal whirler and the emulsion is poured over the plate while it is in motion. After the plate is completely coated, the whirler is closed and kept in motion, the electric heating elements are turned on and the plate is left in the whirler about 25 min. All of the moisture is removed from the whirler while the plates are being made by an exhaust fan.

Exposing the plate is the next operation. The masked negatives are placed in the vacuum exposing frame. The plate is faced up on the frame and the masks are placed over the plate. When the exposing time has been determined the exposure is made by arc lights. During this procedure, the following action takes place: While exposing, the clear parts of the negatives which are the shadows on a positive, become dark. From the deepest shadows to the highest highlight, a hardening of the gelatine takes place.

A Relieved Plate

When the exposing time is completed, the exposed plate is placed in cool circulating water to wash out the bichromates. At this point, a chemical action, or various degrees of swelling, takes place on the plate. Those areas of the image on the plate which have been exposed the longest, such as the shadows, will absorb the least amount of water and remain deep. From that deep shadow to the least exposed highlight one can feel the relief of the entire image.

That part of the plate which was covered by masking paper or opaque

will swell up the most and retain enough moistness so that it will not accept the ink. After the washing-out period the plate is dried.

Before the plate is placed on the press it is submerged in a solution of water and glycerine to swell up the gelatine.

Printing from Plate

Collotype plates are locked on direct rotary press plate cylinders in the same manner as offset plates are locked on offset press plate cylinders. The plate is dried with paper, but the gelatine retains approx. 70% of the moisture.

Collotype ink is a very heavy ink and it is a grease ink. When the ink rollers pass over the surface of the plate, the deep parts, such as the shadows, will receive the most ink. The balance of the image on the plate will accept ink in direct proportion to the amount of light absorbed by the plate.

The only makeready necessary is treating the plate chemically. For example, if the image is too dark, the plate is rubbed or etched down with a solution comprised of water glycerine and ammonia. On the other hand, if the image is too weak, a mixture of grain alcohol, glycerine and tannic acid is used to harden the image to a severe degree to make it accept more ink. Actually, the latitude of toning and gardening the printing surfaces is very limited.

Before starting to print the actual run, the plate must be hardened by using a mixture of water, glycerine and formaldehyde. This toughens the gelatin to such a degree that it is possible to print many thousand impressions from one plate.

Must Have Humidity

A Collotype plate is subject to all climatic changes. For producing fine Collotype printing the plant must be protected against sudden changes such as are caused by heat and cold and high and low humidity. The pressroom must have a humidifier to supply the correct amount of moisture to keep the plate running normally. The moisture is always taken out of the gelatine and absorbed by the paper because of the direct contact of the plate and the paper.

For Collotype printing, a fine grade of uncoated stock is required. Most producers of high quality Collotype printing used a stock that is specially milled for the industry. The paper is available in weights from 60 lb. to 18 pt. bristol. The stock comes only in white but an India tint can be milled. Collotype paper can be processed with varnish, lacquer, plastic, Vinylite, or acetate coating, and it can be processed with embossing of any description.

Questions and Answers

In response to a question asked by Ken Chapin of the Pittsburgh Club, Mr. Hook stated that any book to be printed by the Collotype process must have 50% picture content to be reproduced economically.

If there are any loose particles in the paper which is to be printed upon by Collotype, it is not practical to try to reproduce the job on that kind of paper.

Metal stock cannot be printed upon by the Collotype process.

Color work can be reproduced easily from fourcolor process separations.

Ordinarily, a greater range of colors is inherent in the Collotype process than in the offset process.

Mr. Hook asserted that Collotype is the only process which can be used to print both sides of the stock such as are used in transparency displays, from 8 in. by 10 in. upto 41 in. by 60 in. The backup impression is offsetted on the impression cylinder. In this way, color intensity is secured in transmitted light displays. He exhibited a good size example of color transparency in a light box which had been blown up from a 4 in. by 5 in. Kodachrome film.

Someone wanted to know, on runs of 5000, if there is a gradual disintegration of color. Mr. Hook replied by stating that the degree of color variation is no greater in Collotype than in the offset or letterpress processes.

Moisture in the nonprinting areas of the plate is continuously supplied during the press run by an overhead humidifier.

Type Metals
and Their Care

By WM. C. OTTER*

**Vice President, Imperial Type Metal Co. Abstract of address delivered before PNPA-NJPA Mechanical Conference, Atlantic City, April 1950.*

Impurities:

The common impurities in type metals are copper, zinc, iron, and arsenic. Iron is rarely encountered because of the almost negative affinity of lead for this element. Arsenic is rather common, being hard to entirely remove, but if present in small quantities, does not impair the casting properties of the type metal alloy. Zinc and copper are the most easily introduced accidentally into type metals because of the presence in most plants of zinc and copper engravings, electrotypes and brass matrices. Routing and sawing of plates produces chips, which will work their way into the Linotype metal supply unless carefully segregated. Of the two, zinc is more harmful, causing the metal in the molten stage to become heavy and sluggish, which, in turn will clog the pump nozzle and mouthpiece orifices. Copper, if kept under 0.07% will do no actual harm, but in higher percentages it would have a tendency to choke the pot mouthpieces. Copper would also add to the hardness of the alloy.

Remelting and Drossing

Very often, the important task of remelting Linotype Metal is taken too lightly and is greatly under-estimated. In planning a location for installing the remelting equipment, pick out a small room by itself, if possible, with proper ventilation and light but free from drafts. A ventilating fan is preferable, thus enabling excess smoke and fumes to be cleared quickly. The equipment should include a fairly large-sized furnace with a protective hood, a skimmer, flux, and proper adjusting metals to replace the dross losses. Remember that suitable equipment and adequate supplies pay well in dross savings and in proper maintenance of the uniformity of the metal supply.

Remelting Line-Composing Metal

Linotype Metal is an alloy of 4% Tin and 11.50% Antimony. Through various tests and experiments if this alloy is to operate efficiently and economically, the everyday working metal should be maintained at not less than 3.75% Tin and 11.50% Antimony, and operated on typesetting machines at between 525 deg. and 545 deg. F.

At each remelting, the cleaning should be done at a temperature of 650 deg. F. The Metal should be stirred for several minutes, using a prepared flux in order to free the metal particles from the oxide, thus reducing the dross to a minimum. If the temperature range is above 650 deg. F., you will produce excessive dross, resulting in greater loss of tin. If remelted and skimmed at a lower temperature the result will be excessive loss of antimony. After skimming off the dross, you should replace the dross loss, pound for pound with a recommended Linotype Adjusting Alloy.

When pouring the molten metal, be sure that the molds are located as near to the remelting pot as possible, so as to insure a minimum amount of dross formation in the process. If permitted to form, the oxide imbeds itself in the pigs, causing obstructed throats and clogged mouthpieces, poor slugs, and increased fuel costs.

Take every precaution to keep foreign materials such as copper, zinc, and electrotype plates, brass rules, and matrices away from the Linotype Metal which is to be remelted.

There are three considerations that you should keep in mind when drossing metal: (First) Temperature. The higher the temperature, the more rapidly it absorbs oxygen from the air, thus creating a greater amount of dross. Keep the metal cool or frozen when not in use. (Second) Time. The amount of dross is dependent on time exposure to the air. Remember that in two hours you will get twice as much oxidation as you will in one hour. (Third) Agitation. This will increase the amount of dross, so that it is well not to agitate more than absolutely necessary.

Drossing Stereo Pot

When drossing your Stereotype Metal pot, a thin protective layer of dross, preferably ¼ in. thick, should remain on top of the molten metal. Each pot should

have a hood which fits directly on top of the pot. A swinging door should be available, so that the returned tails and plates can be slid easily into the pot. The hood and swinging door will eliminate the hazard of hot metal splashes; will avoid drafts, which in turn will cool the surface of your metal; and finally, will result in a reduction of dross losses.

In removing the dross, first use a flux to clean and reduce the weight of the oxide to a minimum, then lift off the dross, leaving a protective layer on the surface as already mentioned. This operation should be done at 700 deg. F. Having removed the dross, replace this loss with an equal weight of Stereotype Adjusting Metal.

Adhere to Recommended Procedures

If you will adhere to the remelting procedure recommended, we believe the resultant mechanical troubles will be avoided for the most part. We in the metal business believe the following to be good suggestions to bear in mind:

1. Remove all zinc, copper, brass, and foreign materials.
2. Heat metal to recommended temperatures only.
3. Melt a full pot of metal.
4. Agitate until dross is free of visible metal.
5. Use a flux before skimming to separate dross from metals.
6. Skim dross from surface and place in drum.
7. Add amount of adjusting metals in equal weight to dross removed to replace the lost ingredients.

Temperature and Proper Heat Controls

Linotype Metal has a formula of 4% Tin, 11.50% Antimony, and 84% Lead, while Stereotype Metal has a formula of 6% Tin, 13.50% Antimony, and 80.5% Lead. These Linotype and Stereotype Metal formulas are known as the eutectic and super-eutectic, which have fixed definite low melting points. Linotype is molten at 465 degrees F., and Stereotype is molten at 520 degrees F. Any variation in these formulas in percentages of Tin or Antimony will increase the melting temperature in the handling of your metals.

Now, the reason I have mentioned the eutectic point particularly in reference to Stereotype Metal is because of the following point I wish to make. A demonstration of the super-eutectic in Stereotype Metal took place several months ago in a well known Eastern daily newspaper plant. The foreman of the stereotype department was asked as an experiment, to reduce the temperature in the Stereotype Metal pot from his normal of 650 deg. F. to 550 deg. F. He did so, and you can well imagine what took place. Two spouts are attached to a 10 T. pot; one spout is heated by gas, the other spout is not heated nor was it insulated. When casting at the 550 deg. point, the unheated spout froze completely, while the heated spout showed signs of freezing. Had the casting of plates been continued at or around this temperature, the plates would have solidified faster than normal. The air bubbles, instead of retreating from the face to the back of the plate would have shown up quickly in the face, eventually causing plenty of pressroom trouble.

The metal temperature will change approx. 50 deg. from the pot temperature until it hits the casting box. In other words, since the temperature of the metal in the pot was 550 deg. F., when the metal hit the casting box the temperature change was approx. 50 deg. lower, or at the freezing point.

In securing good results from your metals, it is essential to have sufficient heat in the proper place. To explain, we'll cite a concrete example. Compare two samples of 6 Pt. Elrod strip material, both taken from the same machine, and cast with the same metal but at different temperatures. The Elrod slug and rule casting mechanism is fitted with three separate heating units. The pot unit is controlled by a thermostat and the throat and mold units maintain a fixed heat through rheostat control. One of the two rule specimens can be bent around a finger, indicative of the fact that the correct amount of heat was maintained in the proper places. The second sample when bent around a finger, which is brittle and breaks with little effort when bent around a finger, has not been cast with the correct temperatures all along the line from pot to the casting and welding points. If the metal is maintained in proper alloy, the brittle condition of the second slug is not a metal fault as is so often thought.

Also in this connection, I cannot stress too strongly the need for periodic check-ups on thermostatic metal temperature controls. They are delicate and can be impaired readily.

Stereo Temperatures

Improper heat can result in porosity, sinks, or chills in Stereotype plates. Closely allied with metal temperatures is water temperature control. Seasonal changes alter the temperature of water, resulting in faulty castings. Also, some types of water cause the iron to shell up in the casting box, resulting in hot spots and continued poor face, regardless of changes in water or metal temperatures, and slow cooling of the plate. These conditions of temperatures of metal and water should be closely watched and checked.

Analysis

A chemical analysis of metal at regular intervals, *i.e.*, each month, or every other month, depending upon the size of the plant, is necessary as an aid in maintaining type and plate quality in conformance with standard operating percentages.

A representative sample of line-slup metal to be analyzed should be taken from several machines over a period of a week or more preferably in the form of slugs. From your Stereotype Metal, the best analysis can be obtained from a sample poured into an ingot mold out of the Stereotype Metal pot dipped from well beneath the surface. When having a sample of stereotype metal analyzed, if taken from a pig, try to get the sample from as near the center as possible. If taken from a pot, stir the metal so that any possible segregation will be eliminated, thus giving a true analysis. Specimens have been obtained in other ways through custom, but experience indicates the above methods produce a truer analysis of the metal as a whole. It is of extreme importance to us so that we may, at all times, be familiar with the condition of your metal, enabling us to return the proper ingredients in the form of adjusting alloys to keep your metal fit and up to the required formulas. A record of your analyses will often reveal interesting and important information. It is a safety-valve and often avoids future possible trouble.

Observe Axioms

If you will preach and practice the following axioms, I think you can expect the maximum in performance from your metal:

1. Keep impurities away from type metals.
2. Carefully study your remelting problems.
3. Dross efficiently and use a good flux.
4. Watch metal temperatures and controls.
5. Have metal analyzed periodically.
6. Replace dross losses regularly.
7. Co-operate by using the services as recommended by your metal company.

Cline's New Officers

On December 14, 1950, Col. Warren P. Scott succeeded A. J. Cline as Chairman of the Board and Treasurer of Cline Electric Mfg. Co. Harvey E. Brundage became President; Herbert R. Behr, Vice President, and Jess Halsted, Secretary.

Mr. Cline will remain in a consulting capacity.

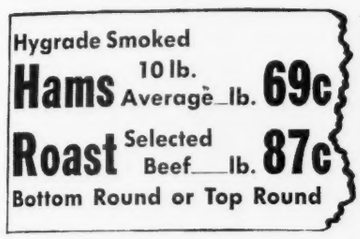
Colonel Scott was formerly chief executive of American Overseas Agencies, Ltd., and the Printers House, Inc., New York.

During the past several months, the illness of A. H. Parks, retiring President of the Company, has prevented him from being active in the business. All other executives, who have been with the Company many years, will remain in their present positions. Colonel Scott and the new officers will continue the policies of the Company.

Recently, the Cline Company moved its offices to its new factory, comprising over 100 thousand square feet, at 3405 W. 47th St., Chicago. The Company was organized by Mr. Cline in 1912 and has been outstanding in its technical contributions to the printing industry throughout the past 38 years.

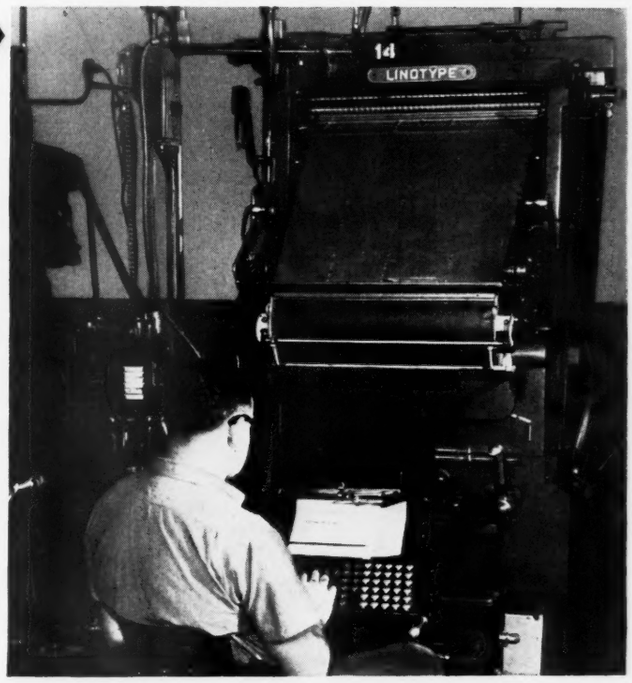
HOW LINOTYPE MIXERS MORE THAN PAY THEIR WAY...

at the *Elizabeth Daily Journal*

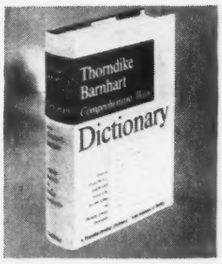


"We were so pleased with our other two Model 35 Linotypes that we added this third one," reports Myron A. Pier, Mechanical Superintendent. And this new Wide Range Linotype Mixer is living up to everyone's expectations. It's turning out mixed foodstore advertising, news heads and straight advertising text in record time. By mixing 8-point text and 30-point display faces on the same slugs, make-up, lock-up and other "floor work" has been simplified; hand composition of display has been cut to the bone. Extra wide main magazines give it the capacity for both large display faces and the smallest text faces.

The Wide Range Model 35 Mixer is available with two or four wide 90-channel magazines or combinations of wide 72- and wide 90-channel magazines. For keyboarding even larger display faces, Model 36 Wide Range Mixer has additional capacity for two or four wide 34-channel auxiliary magazines.



at the *Country Life Press*



Dictionary composition ranks as one of the most complex production jobs known to printers and publishers. That's why Country Life Press turned to their two Model 30 Linotype Mixers when setting the text of the *Thorndike-Barnhart Comprehensive Desk Dictionary*. Type specifications called for mixing roman and italic faces with two different bold faces and special phonetic accents and symbols. Special keyboard layouts on the Model 30 Mixers permitted over 99% of this intricate text composition to be set quickly and accurately *without the use of any sorts*.

Such production efficiency is one reason why the regular edition of this new dictionary will retail for only $2.75. It's also the reason why Country Life Press depends upon six Blue Streak Linotype Mixers—four Model 29's, two Model 30's—for setting complex texts.

The Model 29 Linotype Mixer is available with two or four standard 90-channel magazines or combinations of standard 72- and 90-channel magazines. The Model 30 Blue Streak Mixer has the additional capacity for two or four wide 34-channel auxiliary magazines.

MERGENTHALER LINOTYPE COMPANY
BROOKLYN 5, NEW YORK

· LINOTYPE ·
Linotype Times Roman and Spartan Families

Conference Dates *(with organization names and principal officers)*

American Photoengravers Association — 1951 Convention, Netherland Plaza Hotel, Cincinnati, O., October. W. K. James, President; Frank J. Schreiber, Executive Secretary, 166 W. Van Buren St., Chicago 4, Ill.

ANPA Mechanical Conference—1951 Conference, Edgewater Beach Hotel, Chicago, June 11, 12 and 13. Chairman of the Committee, Edwin H. Evers, Production Manager, St. Louis *Globe-Democrat*. Manager ANPA Mechanical Dept., Vernon R. Spitaleri, 370 Lexington Ave., New York 17, N. Y.

Fifth District Craftsmen's Conference — Secretary-Treasurer, Robert Wolf, Richardson-Taylor-Globe Co., 4501 Mitchell Ave., Cincinnati 32, O.

Great Lakes Newspaper Mechanical Conference—Secretary, Al. P. Oberg, Flint (Mich.) *Journal;*

Illinois Newspaper Mechanical Conference—1951 Conference, LaSalle, Ill., date and hotel to be announced later. President, John Barron, La Salle (Ill.) *News-Tribune;* Secretary-Treasurer, William L. Augspurger, Peoria (Ill.) Newspapers, Inc.

Intl. Assoc. Electrotypers & Stereotypers — 1951 Convention, Kenmore Hotel, Boston, Mass, October 22, 23 and 24. A. P. Schloegel, Executive Secretary, 701 Leader Bldg., Cleveland 14, O.

International Association of Printing House Craftsmen—1951 Convention, Statler Hotel, Boston, Mass., August 19, 20, 21 and 22. President, Fred C. Baillie, 21 Iona, Ottawa, Can.; Executive Secretary, Pearl E. Oldt, 18 E. Fourth St., Cincinnati 2, Ohio.

International Graphic Arts Education Association—1951 Conference, Cleveland, O., June. President, George J. Bilsey, East High School, Cleveland, O.; Educational Director, Fred J. Hartman, 719 Fifteenth St., N. W., Washington 5, D. C.

International Typographic Composition Association—1951 Convention, Hotel Windsor, Montreal, Can., September 13, 14 and 15. President, O. B. Powell, Chicago; Frank M. Sherman, Executive Director, 1015 Chestnut St., Philadelphia 7, Pa.

Iowa Daily Newspaper Mechanical Conference — 1951 Conference, Hotel Montrose, Cedar Rapids, Iowa, May 5, 6 and 7. President, L. T. Caldwell, Stereo Supt., Cedar Rapids (Ia.) *Gazette;* Secretary-Treasurer, Paul F. Kamler, Mechanical Supt., Clinton, (Ia.) *Herald.*

Kansas Newspaper Mechanical Conference — 1951 Conference, Broadview Hotel, Wichita, Kan., September 15 and 16. President, Glenn Cummins, Wichita (Kan.) *Eagle;* Secretary-Treasurer, Larry Miller, 701 Jackson St., Topeka, Kan.

Lithographers National Association—1951 Convention, Spring Lake, N. J., during the week starting June 25. Executive Director, W. Floyd Maxwell, 420 Lexington Ave., New York 17, N. Y.

Missouri Newspaper Mechanical Conference—Secretary-Treasurer, O. K. Hammitt, Mechanical Supt., Moberly (Mo.) *Monitor-Index.*

National Association of Litho Clubs — 1951 Convention, Hotel Cleveland, Cleveland, O., May 11 and 12. General Convention Chairman, Herb Johnson, A. S. Gilman, Inc., 623 St. Clair Ave., N. E., Cleveland, O. Executive Secretary, William J. O'Holleran, Assistant Supt., Myercord Co., 5339 W. Lake St., Chicago 44, Ill.

National Association of Photo-Lithographers — Executive Vice President, Walter E. Soderstrom, 317 West 45th St., New York 19, N. Y.

National Printing Equipment Association, Inc. — President, R. Verne Mitchell, Harris-Seybold Co., 4510 E. 71st St., Cleveland 5, O.; James E. Bennet, Secretary, 140 Nassau St., New York 7, N. Y.

New England Mechanical Conference — Secretary-Treasurer, Walter C. Crighton, Comp. Room Supt., New London (Conn.) *Day.*

Northwest Mechanical Conference — 1951 Conference, Radisson Hotel, Minneapolis, Minn., February 10, 11 and 12. President, Vernon G. Eck, Dunwoody Industrial Institute, Minneapolis, Minn.; Secretary-Treasurer, Ralph Carson, Dunwoody Industrial Institute, Minneapolis, Minn.

Pacific Mechanical Conference —1951 Conference tentatively set for Biltmore Hotel, Los Angeles, during May. President, L. M. Richardson, Mechanical Supt., Los Angeles *Herald-Express;* Secretary for the North, Edw. N. Conley, color press foreman, San Francisco *Chronicle;* Secretary for the South, Fred J. Moyer, Los Angeles *Daily News.*

Pacific Society of Printing House Craftsmen—Secy.-Treas., C. B. Park, 102 N. W. 9th Ave., Portland, Ore.

PNPA-NJPA Joint Mechanical Conference—1951 Conference, Abraham Lincoln Hotel, Reading, Pa., April 6 and 7. Conference director, Theodore A. Serrill, PNPA Manager, Telegraph Bldg., Harrisburg, Pa.

Printing Industry of America — 1951 Convention, Boston, October 24, 25, 26 and 27, hotel to be announced later. President, Robert H. Caffee, President, Wm. G. Johnston Co., Pittsburgh, Pa.; James R. Brackett, General Manager, 719 Fifteenth St., N. W., Washington, D. C.

Research and Engineering Council *of the Graphic Arts Industry, Inc.*—President, Frank F. Pfeiffer, Reynolds & Reynolds Co., 800 Germantown Ave., Dayton, O.; Official Headquarters, Bernard Taymans, 719 Fifteenth St., N. W., Washington 5, D. C.

SNPA (Eastern Div.) Mechanical Conference—1951 Conference, Atlanta Biltmore Hotel, Atlanta, Ga., August 27 and 28. Chairman, L. H. Pickens, Mechanical Supt., Greenville (S.C.) *News-Piedmont;* Secretary, Tom Tanner, c/o SNPA, P. O. Box 1569, Chattanooga 1, Tenn.

SNPA (Western Div.) Mechanical Conference—1951 Conference, Hotel Baker, Dallas, Tex., January 28, 29 and 30. Secretary, C. W. Tabb, 621 Texas Bank Bldg., Dallas, Tex.; Chairman, Manufacturers' and Suppliers' Committee, William Sefton, c/o Howard Flint Ink Co., 1010 Lockwood Dr., Houston 20, Tex.

Technical Association of the Lithographic Industry—(TALI)—President, Michael H. Bruno, Lithographic Technical Foundation, Glessner House, 1800 So. Prairie Ave., Chicago 16, Ill. Secretary-Treasurer, Geo. W. Wilhelm, 814 N. East Ave., Oak Park, Ill.

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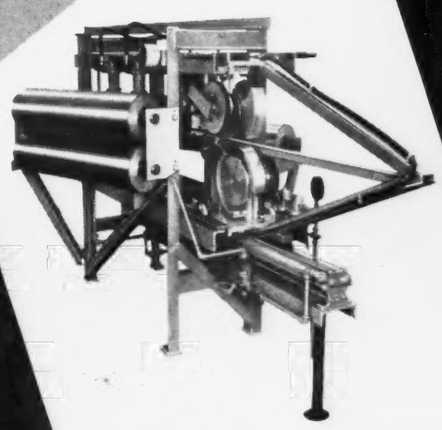

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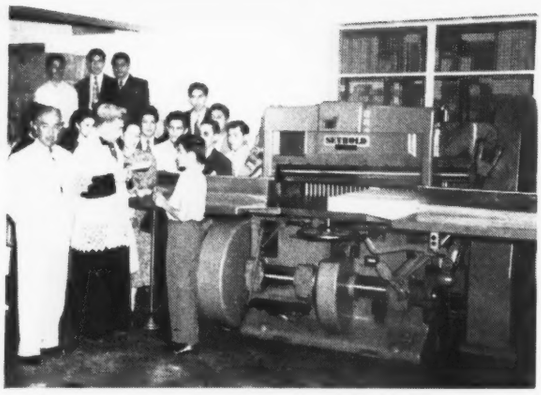
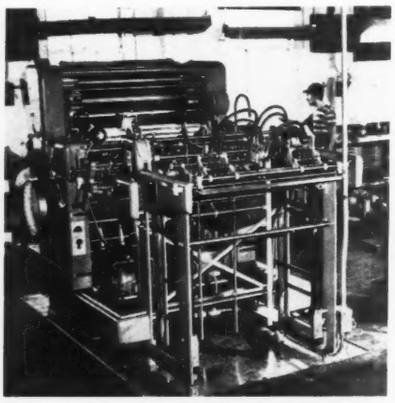


Cutter Christening Rev. Fr. J. Trinidad Ruiz is shown blessing a 44 in. Seybold Cutter before the machine goes into operation in the printing plant of Libreria Mexico, Monterrey, Mex. Such formal christening ceremonies are customary in most countries "south of the border." At right of Fr. Ruiz is Manuel Martinez G., owner and manager of the establishment.

Parker Hart, 48, Sales Manager in Michigan, Ohio and Indiana for Tingue, Brown & Co., died in his sleep October 29. He had a host of friends in the industry throughout the country. He is survived by his wife, daughter and two brothers.



H.R.D. Litho Installation — The initial installation of an E.B.Co. 22 in. by 34 in. Single Color Offset Press with controlled feed roll register was made recently at H.R.D. Litho Co., New York, according to H. W. Gegenheimer, Manager of Electric Boat Co.'s Printing Machinery Div. H.R.D. Litho opened its doors in August of this year to do work for printers, lithographers and brokers exclusively.

Northwest Conference

The dates for the 1951 Northwest Newspaper Mechanical Conference have been set as February 10, 11 and 12 at the Hotel Radisson, Minneapolis, Minn. C. M. Flint, Research Director of the American Newspaper Publishers Assoc., will speak on research at the banquet scheduled for Sunday evening. Members are urged to make their hotel reservations well in advance of the meeting dates.

BOOKS

Type Faces and Production Techniques

A 148 page book has been issued by the Milwaukee (Wis.) *Journal* as an aid to its advertising staff and advertisers in preparing effective newspaper advertisements. Appropriately entitled *Type Faces and Production Techniques for Creating Effective Advertisements*, the book is designed to serve as both a text and a working tool.

The first several chapters deal with basic information concerning type and typography and are printed on left hand pages for reading convenience with right hand pages devoted to illustrating display type faces. Complete alphabets of display faces are shown in 30 pt. size with other sizes of the same type family illustrated to show relative size and weight. The amount of space required by a certain size type is indicated by colored lines on the type page.

Display faces listed in the book are in related groups: Roman, Modern Roman, Cursive and miscellaneous, Sans Serif, and Reproduction types. Among the variety of information included in other chapters is spacing type and combining type faces, preparation of advertising copy, Ben Day patterns, correct proof marking, preparing copy for rotogravure, stock rules and borders, using type in engravings, and type comparatives.

A glossary of printing and advertising terms is also included, as well as copy-fitting tables for type faces displayed throughout the book.

A Primer of Engraving and Printing

AS A basic text and reference covering the mechanical and technical elements of graphic reproduction, the manual *A Primer of Engraving and Printing* will be of value to printers, production men, salesmen, workers in photoengraving plants, publishing houses and advertising agencies. Its greatest worth, however, is in providing the beginner in the Graphic Arts with a basic understanding of the techniques and mechanics of the three major printing processes — letterpress, offset and gravure.

Written by the late Harry A. Groesbeck, jr., the book devotes the first four chapters to an explanation of the theory of reproducing solids and tones by all three processes. The next four tell the step-by-step story of how a photoengraving is made and the deviations in procedure for producing a wide variety of special effects. Description is keyed to the side notes of the photoengravers' scale and copy preparation suggestions are given.

Square finish halftones, with data on staging, re-etching, burnishing; combination line and halftones; highlight halftones; line plates on zinc; laying Ben Day tints; reverse plates on zinc; process color work, proofs; and extra negatives, are among the topics covered. One chapter each is devoted to the presses and principles of the three major processes.

Other chapters deal with pulp and paper production, and ink characteristics for each printing process. The paper chapter discusses kinds of pulp and their sources, various steps in paper making and how they affect the characteristics of the printed sheet. A cross-reference subject index is provided at the end of the book.

A Primer of Engraving and Printing—by Harry A. Groesbeck, jr. Book consists of 174 pages; size, 4¾ in. by 7⅛ in.; paper cover. May be ordered from Colton Press, Inc., 468 Fourth Ave., New York 16, N. Y. Price, $2.50 per copy.

(*Continued on Page 59*)

Competition is Everywhere

(Abstracted from an address delivered at the Annual Convention of the Intl. Assoc. of Printing House Craftsmen, Chicago, September 1950, by Lester S. Crowl, President, The Blade Printing and Paper Co., and the Blaco Advertising Agency, Toledo, O.)

WE HEAR a great deal about our free enterprise system, and I think all of us who understand it, believe that it is the best system which has ever been developed and take a great deal of pride in it. We always seem to recognize that competition is the keystone of this free enterprise system. Sometimes we think that competition simply exists between companies or organizations of people who are competing in the same market for business, but that isn't true. Each individual craftsman is in competition. I suppose you could even carry it down to the place where one craftsman working along side another is in competition with his fellow craftsman. I think more importantly, each craftsman is in competition indirectly through the company with which he is connected. His place in life, and the things that he is going to enjoy, depends to a large measure upon his effort, along with the effort of his fellow craftsmen in what they can accomplish collectively.

Patents

For The GRAPHIC ARTS

Covering patents issued November 7, November 14, November 21 and November 28.

All new patents for the Graphic Arts are reported exclusively for Printing Equipment Engineer by Invention, Inc., an industrial patent research organization in Washington, D. C. Invention, Inc., presently has the only staff in the country that examines, in the U. S. Patent Office, the complete printed copy, drawing by drawing and page by page, every one of the several hundred new patents issued each week. Printing Equipment Engineer is the only trade publication in its field offering a report based on this complete coverage. For copies of the patents listed here specify the patent numbers and send 25c for each separate patent, or 10c for each trade mark or design patent (stamps not accepted) to the Commissioner of Patents, Washington, D. C.

Binding, Cutting, Perforation

2,531,841. DISK BLADE FOR TRIMMING BOOK BLOCKS. The construction aims to provide and maintain a clean cut book edge for the even application of adhesive and to provide for keeping the cutter blade sharpened without interruption of continuous cutting, trimming and adhesive applications. The apparatus comprises a thin, rigid disk having its periphery bevelled on one side to provide a sharp, circular cutting edge and having a multiplicity of shallow spaced grooves, each extending in a radial direction toward the center of the disk beyond the bevel and of V-cross-section. The grooves are formed in the other side of the disk and intersect the cutting edge and bevelled periphery to provide indented portions spaced apart around said periphery. Invented by Frank J. Cashin, Hanover, Pa. Assigned, by mesne assignments, to De Florez Engineering Co., Inc., New York, N. Y. Application June 16, 1948. 1 claim.

Composing Room Equipment

2,531,290. STRIP CASTING MACHINE. Machine is designed for casting strips for use in association with printing. It feeds a supply of metal in the molten or semi-molten state and simultaneously separates a charge of this molten material from the supply, admixes a lubricant with the charge while urging a previous charge through a mold, and cools the molten material while a charge thereof is being urged through a mold, thereby forming a continuous strip of solidified material. Strip is intermittently pulled from the mold and held while cutting for size. Device is self-contained and requires only an electrical outlet for actuation purposes. There are no pivot pins in or adjacent to the heating pot. Device is primed manually. Invented by Anton H. Narrow, Memphis, Tenn. Unassigned. Application April 12, 1948. 2 claims.

2,531,311. EJECTING MECHANISM FOR SLUG CASTING MACHINES. The slug mechanism comprises an injector slide and an ejector blade. It differs from the usual construction in that the ejector slide is operable by an individual power unit in the form of a pneumatic piston and cylinder arrangement, through the medium of a pair of toggle devices which carry the ejector blade and are adapted, prior to the active stroke of the slide, to advance the blade so as to increase the initial pressure exerted upon the base of the slug in breaking its adherence to the side walls of the mold cavity. The ejecting mechanism also includes safety means for stopping the operation of the machine in the event the ejector slide fails to complete its return stroke. Invented by Ransom H. Turner, Great Neck, N. Y. Assigned to Mergenthaler Linotype Co., Brooklyn, N. Y. Application March 20, 1947. 3 claims.

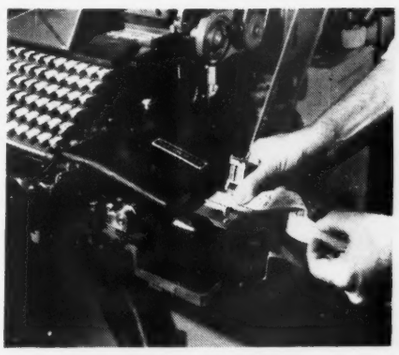
Feeding, Folding, Delivery

2,529,273. SHEET REGISTER MECHANISM has been designed for use with the HUCK device as covered by U. S. Patent No. 2,231,914. It aims to register the sheets without tending to bend or damage the sheet edges. This is accomplished by providing a sheet gripper having a perforated sheet supporting surface and an abutment for protecting the sheet edges. A vacuum bar frictionally carries the gripper and manipulates the sheet by applying suction through the perforated sheet supporting surface. Invented by Alexander J. Albrecht, West New York, N. J. Assigned to R. Hoe & Co., Inc., New York, N. Y. Application June 18, 1947. 20 claims.

Miscellaneous

2,528,850. PROCESS OF DRYING PRINTING INKS. Printing inks of the type containing a fatty oil are dried after printing by subjecting the printed sheets to the action of sulphur dichlor-

The ABC's of TELETYPESETTER OPERATION



A Operator prepares tape on the Teletypesetter Perforator which has a compact touch system keyboard layout.

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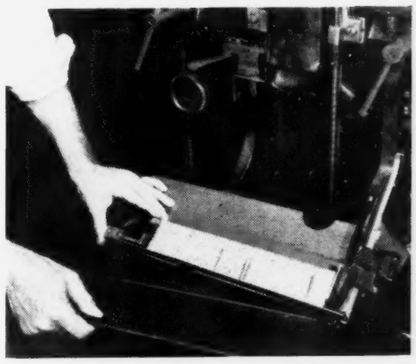

Hundreds of publishers and printers have learned that dependable, mechanical Teletypesetter equipment can increase type production by as much as 50% to 100%. You, too, can cut costs and improve shop efficiency with Teletypesetter. For details, write to:

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ide vapors. The process relates particularly to decalcomania inks. Invented by Clark E. Thorp and Layton C. Kenney, Chicago, Ill. Assigned, by mesne assignments, to The Meyercord Co., Chicago, Ill. Application July 8, 1947. 11 claims.

2,532,032. APPARATUS FOR DRYING WEBS. Dryer is disposed adjacent a letterpress or similar equipment and is employed to dry the web after its passage through the press. Invention makes it possible to bring the press to a quick stop without burning the web in the dryer. Improved mechanism is provided for automatically moving gas burners away from the web when the press is stopped. Relatively cold air is supplied to one or more drying chambers in contact with the web to prevent scorching or burning. Shield members are moved between burners and web when web is stopped. Invented by Bernard Offen, Chicago, Ill. Unassigned. Application January 28, 1947. 17 claims.

Plate Making

2,530,232. METHOD OF PREPARING INTAGLIO PRINTING SURFACES is disclosed in which a positive half-tone transparency depicts the tones of the subject by completely unconnected dots varying in size in accordance with the varying tones of the subject. The larger of the dots have opaque silver grain centers and relatively transparent magenta peripheral fringes. The smaller dots in the highlight areas are relatively transparent and completely magenta in color. All of the dots are surrounded by a field consisting of a colorless transparent area. Invented by William M. Devers, Springfield, Ohio. Unassigned. Application November 20, 1945. 13 claims.

2,530,793. SHUTTER AND LENS SYSTEM FOR HIGH-SPEED COLOR CAMERAS is of special value for obtaining color value negatives for the color printing arts wherein color printing plates are made from color value or color separation negatives by which to print colored inks in superimposed relation upon sheets of paper. A device is provided whereby each of the color value images is photographed with the same amount of light that passes from the colored object to the camera along a single axis, thereby avoiding parallax and obtaining balanced color value transparencies. The photographic plate areas are exposed at the same time on a single photographic plate, so that balanced transparencies are produced at start of process, and the balanced relations can be carried through the process to the printing plates. Reworking of printing plate is avoided. Invented by Richard Thomas, Westwood Village, Calif. Unassigned. Application May 10, 1946. 1 claim.

2,531,647. STEREOTYPE PLATE FORMING AND FINISHING MACHINE accurately and rapidly forms a plurality of pockets in the inner surfaces of stereotype plates and performs this operation on a succession of plates automatically. A number of rotary pocket milling cutters are provided in gang arrangement in combination with a plate-supporting arch, adjacent one edge of the arch. Cutters are reciprocated in unison longitudinally of the arch and transversely thereof, while adjacent cutters are rotated in opposite directions. The cutters may be rendered inoperative so that plates may pass through the machine without having pockets cut in their inner surfaces. Another feature of the invention comprises a combined plate cooling water spray and a drying mechanism and means for controlling the operations thereof. Invented by Oscar C. Roesen, Scarsdale, N. Y., Charles L. Richards, South Plainfield, and Paul L. Tollison, North Plainfield, N. J. Assigned to Wood Newspaper Machinery Corp., Plainfield, N. J. Application September 10, 1946. 17 claims.

2,532,136. GRAINING OR ABRADING LITHOGRAPHIC PLATES BY CENTRIFUGAL BLAST OF WET SLURRY. Machine includes a vertical cabinet in which an elevator is reciprocated up and down. On the elevator is mounted a plurality of plate holders or shells, each plate holder having devices for holding cylindrical plates to be grained. A blast wheel in the cabinet can discharge a slurry horizontally and uniformly about its entire periphery against the cylindrical plates as they are moved back and forth in the path of the blast. Spent slurry in the bottom of the cabinet is drawn off by a circulatory pump and is refed to the blast wheel through an upstanding feed pipe feeding into open center of blast wheel. Elevator is driven by a hydraulic servomotor. Invented by Otto E. Zahn, Mishawaka, Ind. Assigned to American Wheelabrator & Equipment Corp., Mishawaka, Ind. Application March 17, 1949. 11 claims.

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SLASH YOUR PRINTING COSTS WITH THE

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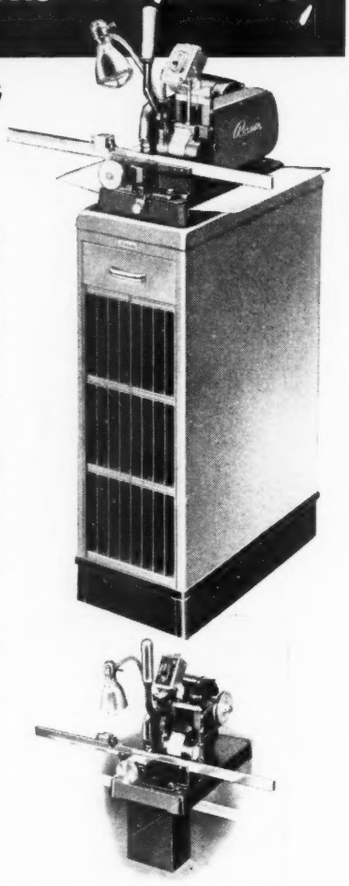

If you need miters in either small or large quantities, no other machine nor method can turn out anywhere near as many perfect joining miters so quickly from strip material. That's how the Rouse Power Miterer can slash your printing costs by doing work in minutes that now takes you hours.

A Rouse Power Miterer won't cost you one cent! Printers the world over say that money paid for a Rouse Power Miterer quickly comes back through tremendous savings in expensive time. After getting your money back, you'll start collecting daily dividends from permanently lower operating costs.

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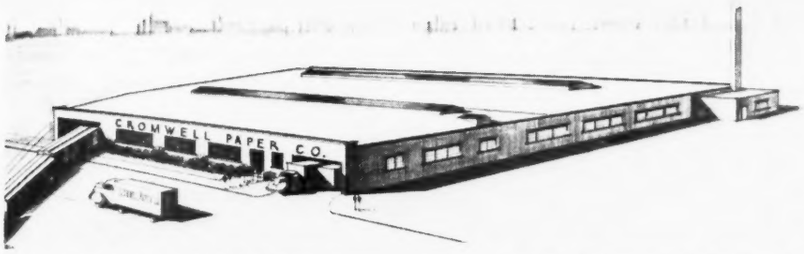

Cromwell Paper To Build New Plant—David M. Weil, Chairman of the Board of Cromwell Paper Co., has announced plans for the construction of a new 25,000 sq. ft. addition to Cromwell's Chicago plant. The new building (as shown in the artist's drawing above) will be erected at 3048-60 W. 48th Pl., across the street from the company's main offices and factory at 4801 S. Whipple St. The facilities to be housed in the new structure should be in operation by Spring of 1951, it was stated.

Miehle Executives Speak

Carlton Mellick, Vice President in Charge of Sales, C. R. Spicher, Sales Research Director, and Charles A. Harwood, Sales Representative, all of Miehle Printing Press and Mfg. Co., each served as guest speaker at respective meetings of the New York, San Francisco, and Minneapolis-St. Paul Clubs of Printing House Craftsmen recently.

ARC Disaster Help

The Red Cross provided relief in 2400 disaster operations during the last decade. Some 1,600,000 persons were given assistance.

report, no patents have been issued for this heading.

Printing Presses and Equipment

2,528,965. DOCTOR MECHANISM FOR ROTARY INTAGLIO PRINTING PRESSES is disclosed. Invention shows, in an enclosed ink fountain, a fixed back frame, a printing cylinder and a mixing mechanism therefor comprising a reciprocating carriage, a doctor frame including brackets pivoted to swing on the carriage, a platform slidable on the brackets, a doctor blade mounted on the platform, and coacting means for adjusting the ends of the doctor blade individually or simultaneously toward and away from the printing cylinder comprising swiveled nuts on the platform and manually operated adjusting screws mounted on the brackets and threaded into the nuts. Invented by Joseph E. Meyer, Westerly, R. I. Assigned to C. B. Cottrell & Sons Co., Westerly, R. I. Application April 21, 1945. 10 claims.

2,530,282. APPARATUS FOR PRINTING includes a plate cylinder, an impression cylinder and an inking train. The inking train comprises a fountain; a rotating metal roller adapted to deliver ink from the fountain; a knurled roller; an intermediate ductor roller having a rubber surface engageable with the ink-delivering metal roller and the knurled roller; and a roller having a hard rubber surface. The hard surfaced roller engages the knurled roller and the plate cylinder. The knurled roller has the effect of causing the ink to transfer uniformly and in the correct amount to properly ink the surface of the printing plates and thus to secure an impression of high quality on the web as it passes between the plate and impression cylinders. Owing to the simplicity of the inking train, the speed of the press may be increased materially. Invented by George R. Brodie, Lower Merion Township, Montgomery County, and William M. Hawkes, Jr., Philadelphia, Pa. Assigned to Fred'k H. Levey Co., Inc., New York, N. Y. Application October 26, 1948. 5 claims.

For Patent Research in the U. S. Patent Office, or a prompt estimate on any type of search, address INVENTION, INC., Munsey Bldg., Washington, D.C.

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TRU-MOLD CORK MOULDING BLANKET . . .

In perfect density and proper flexibility this outstanding EASTERN product leaves nothing to be desired. TRU-MOLD is available in Medium, Medium-hard and Hard densities. An exceptionally high quality blanket . . . *you'll like it!*

FLECTO GUMMED BACKING FELT . . .

Accurately gauged, clean tearing, rapidly adhering felt suitable for any make of dry mat, regardless of heat used in scorching. FLECTO does NOT peel, slip, crack or crystallize! Perfect bonding prevents separation into layers.

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CHALLENGE MACHINERY COMPANY (Composing Room Equipment.)

EASTERN FOR ECONOMY

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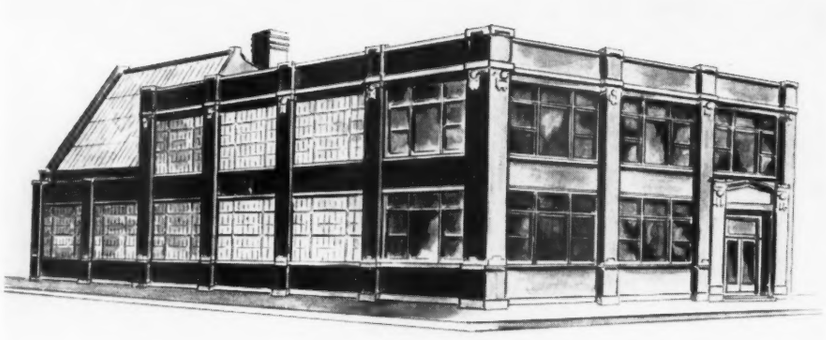
Neely Expands



The present plant of the Neely Printing Co., Inc., at 871 No. Franklin St., Chicago, has been the scene of a substantial increase in production facilities in recent months. Installation of major items of new equipment include additional Linotypes of newest design, and a Visual Registering Machine for lining up and positioning color press forms, in the composing room. In the bindery, a Sheridan Automatic Gathering, Binding and Covering Machine, a Bracket Trimmer, and several smaller items such as improved Punches, Sealing Machines, Folding Machines, Cutters, etc. have been added.

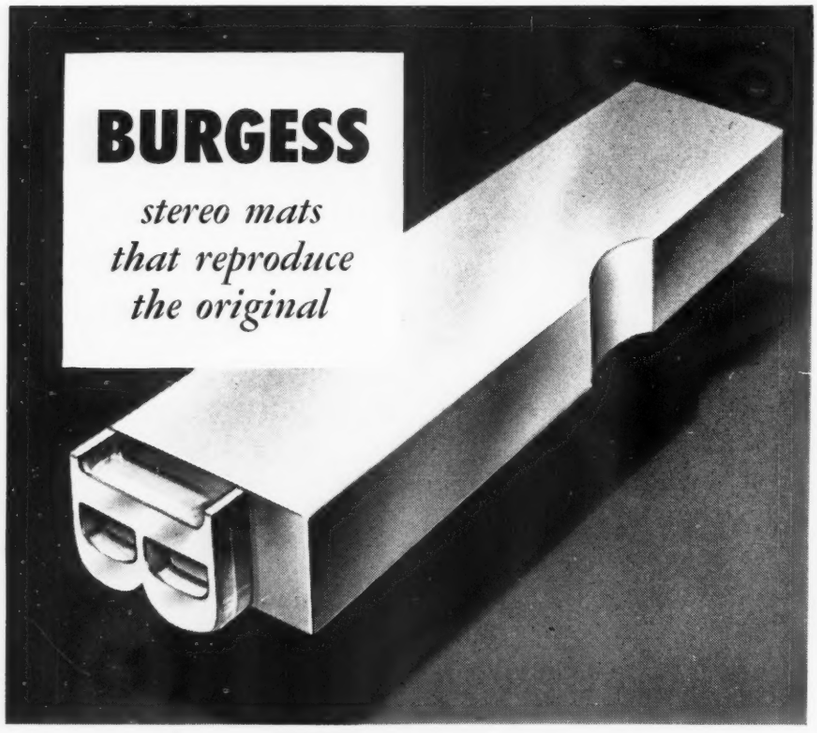
To provide additional floor space for the necessary expansion of various departments of the plant, the Neely organization recently acquired the corner building formerly occupied by the Kruetgen Engraving Co., at Walton and Franklin Sts., in the block just north of the main Neely Building. Included in the purchase is the adjoining vacant property, which provides space for the construction of an additional new building which may be required in the not-too-distant future.

The newly acquired Neely Building No. 2 is a substantial two-story structure which adds several thousand feet of well-lighted floor space to the present plant capacity. It will house the affiliated Franklin Offset Litho Co., which up to the present time has occupied the south wing of the main Neely Building.

In the rearrangement of the floor space in the main building, provision is made for an enlarged sheet-fed Rotary Department, with production line arrangement for prompt handling of the considerable quantities of paper involved in the operation of these high-speed, large capacity machines.

The affiliated Offset Plant also is substantially expanded in its new quarters. The first floor of Neely Building No. 2 houses the offset pressroom, with batteries of presses in four sizes- 17 in. by 22 in., 23 in. by 35 in., 42 in. by 58 in., and the 2-color 35 in. by 45 in. This latter pair, the latest Harris two-color presses, provide capacity for a large volume of precision two- and four-color work. On the second floor of this building are the camera, hand-work and plate departments, as well as the step-and-repeat machine.

This latest expansion of one of Chicago's best-known printing companies climaxes some 40 years of steady growth.



Hold the fine serifs of a bright new font of foundry or monotype. Burgess stereo mats do just that . . . and deliver a plate casting that will reproduce faithfully every dot or line in the original pattern. Laboratory control through every step in the manufacture of Burgess stereo mats, is your assurance of uniform high quality stereotyping every time.

Why not put Burgess mats to work in your shop today?

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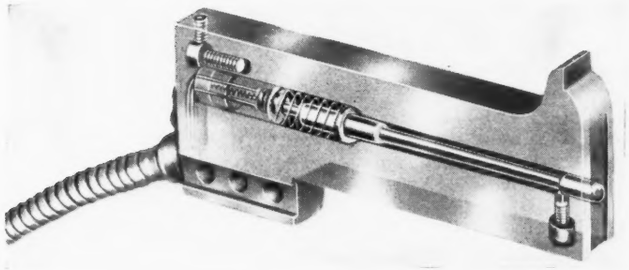
Manufacturers and Distributors of
Burgess Chrome and Tone-Tex Mats
FREEPORT, ILLINOIS

A Laboratory Product BURGESS Chrome MATS

Heidelberg's 100th Year

A 36 page anniversary booklet has been issued by Schnellpressenfabrik, makers of the Original Heidelberg press, to commemorate the one hundredth anniversary of the founding of the company. Approximately 50 illustrations show views of the assembly operations in the firm's plant in Germany. The inside front and back covers contain page size four color reproductions of paintings. Illustrations and specifications of the Original Heidelberg 10¼ in. by 15 in. and 13⅜ in. by 18⅛ in. presses are included. Cover of the 8¾ in. by 11¾ in. booklet is printed in blue, gold and black.

TWO YEARS OF SUCCESSFUL OPERATION!



Phantom view of switch and operating rod built into left hand vise jaw.

. . . makes the *Star Automatic Quadder* a known factor . . . the repeat orders received tell the tale.

The Electro-Pump stop (patent pending) has had an important part in the outstanding success of the Star Quadder. It is an ingenious safety device minimizing the possibility of squirts. Pressing of center (operating) rod by full line of matrices closes circuit and energizes solenoid which actuates pump stop lever. Precision adjustment assures that a loose line will not cast.

Model D Quadders are available for immediate delivery; the Model E (Synchronized for Mohr Saw) will be available soon.

PRECISION
TRADE ★ MARK

LINOTYPE PARTS COMPANY
INCORPORATED
Factory and Main Office
SOUTH HACKENSACK, N. J.
Branch Office: 1327 BROADWAY, KANSAS CITY 6, MO.
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Thoroughbreds

ALWAYS ARE *WINNERS* . . .

Championship form is easily recognized in animals, men and machines. Printers everywhere have found the JCM Semi-Automatic Collating and Tipping machine to be a champion in the production of forms which are simplifying business operations daily.

With the JCM machine added to your bindery equipment, your printing production facilities are expanded to enable you to tap new and profitable business in the manufacture of snap-out and other one-time carbon interleaved forms. There is no form which cannot be produced on the JCM within maximum sheet limits of 17" x 25½". You owe it to yourself to get complete information on the profit potential of this machine. ***Write for Catalog J-2.***

J. CURRY MENDES
CORPORATION
104 BROOKLINE AVE. BOSTON 15, MASS.
538 So Clark St CHICAGO, ILL. 22 East 29th St. NEW YORK, N. Y.

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Books

(Continued from Page 44)

Color for Profit

PRINTING Equipment Engineer is mentioning *Color for Profit* so that if they desire to do so, production and mechanical executives may call the book to the attention of those creating color art in their plants. Louis Cheskin, Technical Director, Color Institute of America, has written this book for art and sales people who create designs for counter displays, direct mail advertising, point-of-sale posters and product packaging.

In the book, it is intended that by the use of Mr. Cheskin's methods, the response of people to certain color combinations and effects can be predicted beforehand and produced according to scientifically determined formulas. With advertisements, posters, packages, stores, offices, stationery, circulars and counter and window displays, the right color balance which will attract the customer to the product, can be determined.

There are 16 full color plates of actual posters, packages and advertisements sponsored by well-known manufacturers with analyses of their good and bad features. These are intended to serve as examples of right and wrong use of color and design.

Color for Profit—By Louis Cheskin. There are 164 pages, 5¾ in. by 8¾ in. Bound in green cloth with gold and color stamping; 16 color plates. Price, $3.50. Order direct from Liveright Publishing Corp., 386 Fourth Ave., New York 16, N. Y.

Red Cross Costs

Red Cross administrative overhead last year was less than 5 percent.

Labor Relations Work Kit

A NEW manual *Labor Relations Work Kit* has been published by the National Foremen's Institute, Inc. The manual is designed to put the labor relations and personnel man in touch with some of the more successful techniques worked out by companies who, when faced with a particular problem, have come up with a workable solution. The editor points out that here you will find no theory—no long expositions on probability, no "ifs". Instead, you'll more likely find the name of the company which worked out the individual or collective problem, together with the step-by-step "how to do it" procedure—often with visual illustrations. The editor suggests there are enough know how tips and aids, ideas and leads in the experiences of others to improve any labor relations or personnel practice program.

Labor Relations Work Kit—Edited by Lawrence Stessin with the assistance of the staff of the *Employee Relations Bulletin*. Published by the National Foremen's Institute, Inc.; over 200 pages. Price $7.50.

How To Plan and Buy Printing

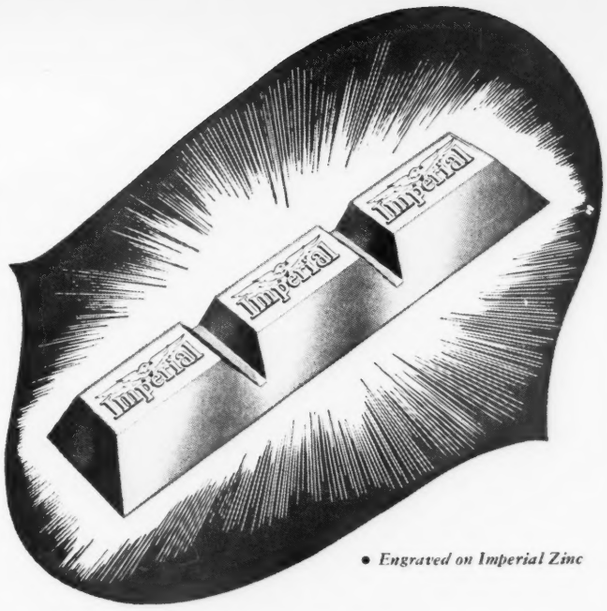
R. RANDOLPH KARCH has provided a useful text book for the buyers of printing, commercial art workers, advertising agency employees and students of the Graphic Arts. This book, *How To Plan and Buy Printing*, is just what the title implies. It contains information on how to prepare copy, how to prepare illustrations and order engravings and duplicate plates, and how to understand type composition.

Included are chapters on how to select body types, how to distinguish body type, how to select display types, how to specify type and proofread, and how to understand type measurements. Karch has prepared the text to show what processes are involved in getting a job to the printer and how to apply the techniques of preparing the printing job.

Each phase of the operations involved is analyzed. For example, Karch explains in the book that "the chief rules to follow in the selection of body types are the rules of common sense. The main criterion for the proper selection of body type is readability. The type face must be a size that can be read. The type face must be a design that can be read."

In *How To Plan and Buy Printing* material is included also on how to understand the Graphic Arts processes, how to plan booklets and mailing pieces, how to

It's a Miracle!
HERE'S ONE BABY THAT NEVER NEEDS CHANGING!
NEW Miracle COLD TOP DEVELOPING TANK
Guarantees Crystal Clear Solution without Ever Changing Developer!
UNIFORM DEVELOPER MEANS UNIFORM PRINTS . . . . . .
Here's Why It's a MIRACLE of Consistency
● No developer changing
● Temperature thermostatically controlled within 1° up to 140° F
● No costly plumbing—works from any 110 volt receptacle
● Filter change needed only every 3 to 4 months—takes minutes
● Solution circulated and filtered whenever necessary—quickly
● Self-draining ledge and handy folding dipper
● 9 Gallon capacity
● Inside—made entirely of stainless steel
● Outside—steel with purple, baked wrinkle finish
CUTS COSTS by
Eliminating make-overs.
Stopping developer waste.
Saving on time and labor.
Tested and Approved under heavy-duty operation
$325.00 F.O.B. Chicago
ORDER TODAY OR WRITE FOR MORE INFORMATION
GENERAL PLATE MAKERS SUPPLY CO
522 S. Clinton St., Chicago 7, Ill. 64 Marietta St., N.W., Atlanta, Ga.



• *Engraved on Imperial Zinc*

Avoid All Type Metal Worries with the Imperial Plus Plan

• There's no trick at all in keeping your working metal supply *always* up to specifications. The Imperial PLUS PLAN assures you adjusting alloys of exactly the proper formula to replace the ingredients or richness of your type metal that are lost through drossing. It's easy to do, too.

Simply accumulate and ship to us in drums—which we furnish without charge to you—your accumulation of dross. In return, we'll send to you in pound-for-pound exchange the adjusting alloys which will maintain your working metal supply at its normal quality.

Today, the value of your metal supply is too great to gamble with. Nor can you afford poor casts, machine shutdowns, and other production losses caused by deteriorated or contaminated type metal.

Put the maintenance of your type metal on the Imperial Plus Plan as thousands of others are doing and avoid type metal worries.

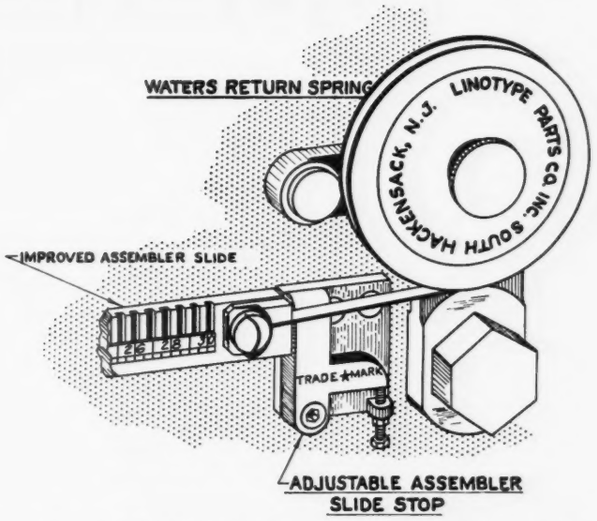
Imperial

TYPE METAL COMPANY

SERVING THE GRAPHIC ARTS *Exclusively*

PHILADELPHIA 34 • NEW YORK 7 • CHICAGO 50

A TRIO OF "STAR" IMPROVEMENTS


WATERS RETURN SPRING
LINOTYPE PARTS CO. INC. SOUTH HACKENSACK, N.J.
IMPROVED ASSEMBLER SLIDE
TRADE ★ MARK
ADJUSTABLE ASSEMBLER SLIDE STOP

make LINOTYPE ASSEMBLERS more precise in operations . . . lower in maintenance cost

★ **Waters Return Spring (Part No. M-32)**

Replaces lever, (Part No. D-809) and Spring, (Part No. D-810). Controlled movement of assembler slide on a straight line obtained through the adjustable tension spring steel band.

★ **Improved Assembler Slide (Part No. D-1654-A)**

Has pica wide teeth placed at the top, nearest the straining point. Clamp can't sway to cause loss of distance. Slide is HARDENED where it usually wears.

★ **Adjustable Assembler Slide Stop (Part No. D-54-A)**

A small fibre insert cushions the assembler slide as it returns to rest. No more ride-up on the old slanted stop (D-54) which caused the slide to wear. Quick adjustment of distance between Star Wheel and Finger is obtained by set screw and lock nut shown in lower middle of drawing. The fibre insert at a cost of very few cents is the only part that need ever be replaced.

ALL PARTS INSTALLED QUICKLY AND EASILY WITHOUT DRILLING OR TAPPING

TIE THESE IN WITH ACE ASSEMBLER DRIVE and ACE MATRIX DELIVERY BELTS! You'll really have something!

PRECISION
TRADE ★ MARK

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Cleveland Offset Roundup—Guests and members numbering 241 persons, were present at a recent meeting of the Cleveland Litho Club which was devoted to the subject of offset-lithography. The panel participating in the question and answer session is pictured above with two representatives of the Cleveland Club. Seated from left to right: Herb Leedy, Roy Tyler, John Morehouse, A. B. Woodruff and Ren Perry, all of Harris-Seybold Co.; standing, Ralph Honeck, Educational Chairman, and Andrew Balika, Vice President, Cleveland Litho Club.

select paper stock, and how to bind the book. A glossary of printing terms is included.

How To Plan and Buy Printing—by R. Randolph Karch. Book consists of 169 pages; numerous type face specimens, illustrations and charts; size, 8 in. by 11¼ in.; brown linen cover with gold and dark green stamping. May be ordered from Prentice-Hall, Inc., 70 Fifth Ave., New York 11, N. Y. Price, $5.65 per copy.

Newspaper Type Book

THE Louisville (Ky.) *Courier-Journal and Times* has issued a type book to be used in the preparation of productive newspaper advertising copy. The 110 page book was designed to present all the type faces, numerals, borders and decorations used by the *Courier-Journal and Times* in order that advertising people could easily visualize the various faces and sizes available.

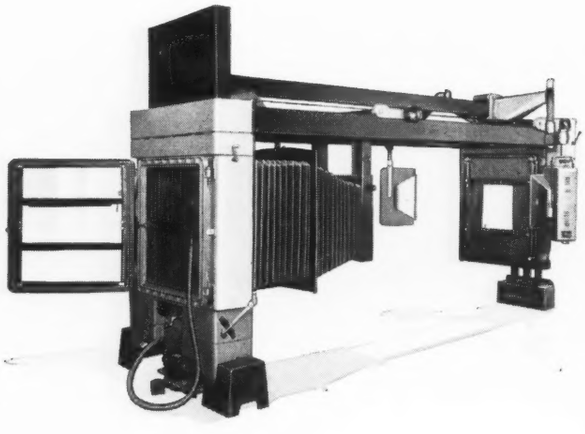
Character count tables are included for each size and family of type. Also included are advertising regulations governing the acceptance of copy, delivery of proofs, corrections, etc., regulations on solid blacks, schedule of advertising copy and correction deadlines, early copy, store proofs and composition charges, column and page measurements, and preparing layout and copy.

The text is condensed as much as possible and is phrased for the person not familiar with newspaper terminology. Similar space is devoted to explanations on marking storeproofs, proofreaders' marks, mat service, use of bad signature cuts and mats, procedure and schedules on engravings, and copyfitting.

The 9 in. by 12 in. manual is contained within an imitation leather, silver stamped, loose leaf binder cover. Copies are available at $5 each by writing the Louisville (Ky.) *Courier Journal and Times*.

At the Southern New England Typographers Assoc. meeting, on December 2 in the Hotel Garde, Hartford, Conn., Fred W. C. French, Assistant to the Vice President of Lanston Monotype Machine Co., gave an informal talk on the use of the Monotype in a trade composition plant. The members and their wives were guests at the Smorgasbord dinner following the meeting.

ROBERTSON QUALITY MEANS *MORE PROFITS FOR YOU!*



The engineering and constructional quality built into the Robertson Overhead Precision Camera adds up to greater profits for your shop. Built with aluminum castings, iron castings, and machine steel, the all-metal construction gives rigidity, strength, accuracy, and long life to the camera. Precision machining of all moving parts assures pinpoint accuracy which results in fewer spoiled plates and more profitable camera time.

All moving sections of the camera operate on precision sealed ball bearings made to Robertson specifications. The resultant fingertip ease of operation speeds work, thereby creating more profitable camera time.

Greater economy of operation is offered by Robertson because of the simple, sturdy, precision construction which makes the camera virtually maintenance free.

Robertson Overhead Precision Cameras are made in sizes from 24" to 60" and will handle any and every job in the shop.

NOTE: The rear case of the Overhead Camera is designed for simple application of the Robertson Extension Back. For further information *contact your dealer or* —

Designers and manufacturers of: Precision Overhead, Darkroom, Gallery, and Prism Cameras • Distortion Cameras • Camera accessories • Film cabinets • Wet stripping tables • Temperature controlled sinks • Printing frames • Plate whirlers • Ink up tables • Layout tables • Etching machines

R. R. ROBERTSON COMPANY
3067 ELSTON AVENUE • CHICAGO 18
Eastern representative: Wm Clackworthy • 100 W. 42nd St., N. Y. • Wisconsin 7-5474

BEVERIDGE *Says:*

"What Do You Consider the Most Vital Quality Feature of a Dry Mat?"

We have asked that question many times. In some plants they say **uniformity.** Others say it is a question of **service** but we believe that most plants consider the ability to make a clean cut impression with the smallest pick up is the most vital quality attribute of a good mat.

Our customers invariably say that BEVERIDGE MATS do the best job in reproducing details —that's why they lead in quality. Try them yourself in your own plant.

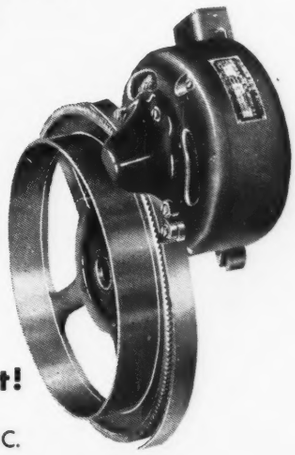
New Products Division
The Beveridge Paper Company
Indianapolis 4, Indiana

Beveridge Dry Mats

a GREAT motor...

(FOR LINOTYPE OR INTERTYPE)

backed by almost sixty years of experience



the CUSHMAN OFFSET MOTOR

...still lower in cost!

CUSHMAN ELECTRIC CO. INC.
Associated with

PRECISION TRADE ★ MARK
LINOTYPE PARTS COMPANY
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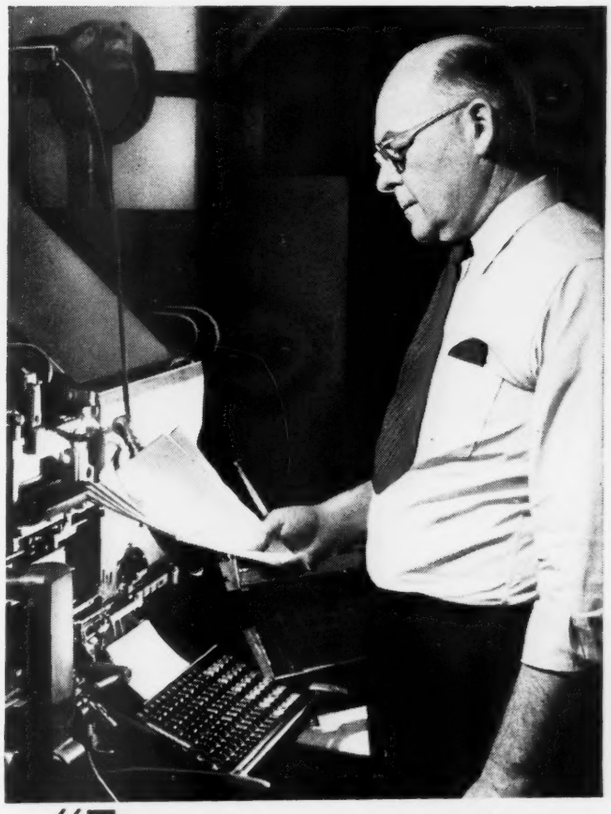
Branch Office 1327 BROADWAY, KANSAS CITY 6, MO.
CHICAGO • MINNEAPOLIS • DENVER • NEW YORK • BOSTON



"To me as an operator, Blatchford's the buy because

... it melts smoothly—flows freely—molds sharply—sets quickly."

No question about it, Blatchford Metal has *everything* it takes to enable your operators to do the best possible job on their machines. And there are reasons for this—three good reasons.

Reason No. 1—the lead, tin, and antimony are top quality. Metal resources and research facilities unmatched in the field assure this.

Reason No. 2—these metals are precisely proportioned. No rule of thumb in Blatchford operations!

Reason No. 3—alloying operations are under rigid control—every batch of Blatchford reflects nearly 100 years of metal-mixing know-how.

Ask your operators—your make-up men and pressmen, too—what metal best fills the bill. Chances are they'll say, "Blatchford." Try it . . . you'll see why.

Keep your metal stock always up to par—use the famous *Blatchford Metal Maintenance Service.* Write for details.

NATIONAL LEAD COMPANY, *Atlanta, Baltimore, Chicago, Cincinnati, Cleveland, Pittsburgh, St. Louis; National Lead Co. of Mass., Boston; E. W. Blatchford Co., New York; Morris P. Kirk & Son, Inc., Los Angeles; American Lead Corp., Indianapolis.*

E. W. BLATCHFORD COMPANY — REPUTATION — ESTD 1854 — INCO 1890 — TOWER OF STRENGTH

Blatchford...
the NATIONAL name for dependable metal

Makers of the famous Blatchford "Honeycomb" Base

Recent Equipment Installations

Recent Lawson Installations

Seventeen installations of Lawson equipment have recently been made by the E. P. Lawson Co., according to David W. Schulkind, President of the company. They are as follows: Heavy Duty Drill Slotting Machines—Eastern Tablet Corp., Albany, N. Y.; J. C. Penny Co., New York; Everett Waddy Co., Richmond, Va.; Jobbers Publishing Co., Inc., Indianapolis, Ind.; Delta Bindery, Inc., New York; 39 in. Heavy Duty Automatic Clamp Cutters — Deluxe Check Printers, Inc., Chicago; Yogg & Co., Newark, N. J.; Fine Arts Printing, Chicago; General Mailing & Binding, Inc., Detroit; 46 in. Heavy Duty Hydraulic Clamp Cutters—Foilcraft Printing Corp., Brooklyn, N. Y.; Crownola Looseleaf Products, Inc., New York; Sielaff Paper Co., Milwaukee, Wis.; Vevier Looseleaf Co., St. Louis, Mo.; 46 in. Electronic Spacer Cutter—E. R. Squibb & Sons, Long Island City, N. Y.; 52 in. Heavy Duty Hydraulic Clamp Cutter—Zellerbach Paper Co., Oakland, Calif.; 52 in. Electronic Spacer Cutters—Eastern Tablet Corp., Albany, N. Y.; The Colwell Press, Minneapolis, Minn.

Plug-In Humidity Controller — An automatic control designed to operate electrically powered humidifiers and dehumidifiers is installed by attachment to any electrical outlet. According to the sponsor, Abbeon Supply Co., the humidifier or dehumidifier is plugged into the control for automatic operation, the control plugged into a wall outlet, and the dial set at the percentage of relative humidity desired. It is claimed the controller can handle a load of 15 amps., 115 v. Humidity scale is graduated from 20 to 100 percent relative humidity. The instrument measures 7¼ in. by 3¾ in. by 6¾ in. high and weighs 3¼ lbs.

Wood Presses Installed

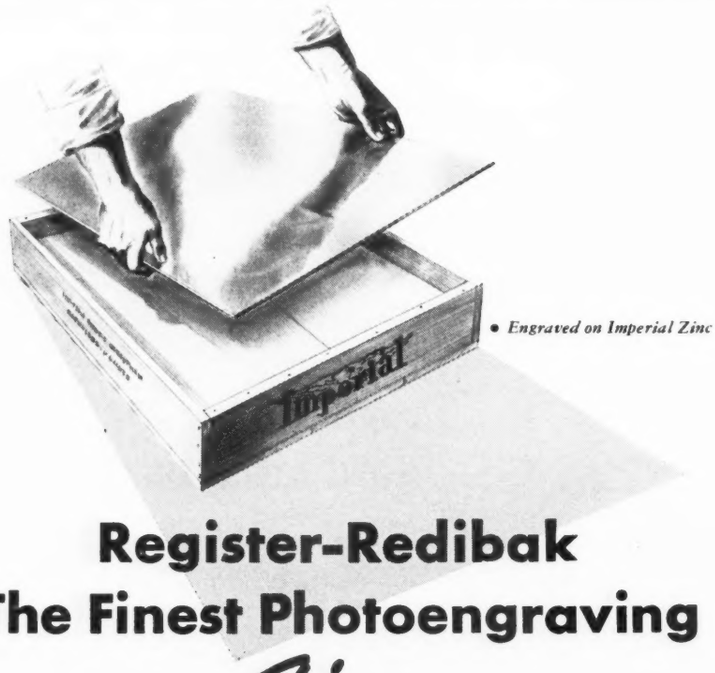
Wood Cosmopolitan Presses have been installed at the Stratford (Ont.) *Beacon-Herald* and the St. Thomas (Ont.) *Times-Journal*, according to a recent announcement by Wood Newspaper Machinery Corp. Both presses have a maximum capacity of 40 pages, two-page jumps are available on collect runs, and facilities for single or multi-color printing will be provided.

Offset Perfecting Press

Latham Process Corp., offset lithographers, has installed what is claimed to be the first Mann sheet-fed perfecting offset press in the New York, N. Y., area. This press prints both sides of the sheet simultaneously in one color at speeds up to 5000 i.p.h. It takes a maximum sheet of 38 in. by 53½ in., utilizing a printing area of 37 in. by 53 in., and is said to handle all stocks from onion skin to 0.035 in. board.

M. L. Co. Annual Report

The 1950 Annual Report of the Mergenthaler Linotype Co. is contained in a 24 page booklet recently released by the company. The sales volume of the firm for the 1950 fiscal period, while not as large as that of the 1949 peak, approximated the 1947 and 1948 levels. Under Product Development, Linotype's Blue Streak Comet line composing machine is discussed as the most important of the three new Linotype products shown at the recent Graphic Arts Exposition. Also shown at the Exposition were the ML Quadder and the Linofilm photocomposing machine. In the report it is pointed out that until there is more conclusive evidence of existence of a market for a photocomposing machine, the Linofilm will not be offered for sale to the trade.



• *Engraved on Imperial Zinc*

Register-Redibak
The Finest Photoengraving
Zinc

• Imperial Register-Redibak is the finest photo-engraving zinc obtainable because it is processed from spelter to finished sheet under meticulous control in the most modern zinc plant in the industry.

Distinguished by a fine, uniform grain structure, Imperial Zinc prints up well, takes powdering with only normal care to prevent shoulders and undercutting and stands up well under successive bites where extra depth and clean bottoms are demanded.

The back of every sheet of Imperial Zinc is protected by Redibak (patented). Through the special technique by which Redibak is applied, plate stretch is minimized, assuring close register when Register-Redibak is used for color plates.

Imperial Zinc

A Product of

IMPERIAL TYPE METAL COMPANY

SERVING THE GRAPHIC ARTS *Exclusively*

PHILADELPHIA 34 • NEW YORK 7 • CHICAGO 50

35
YEARS EXPERIENCE
Designing

- Newspaper and
- Printing Plants
- New Plants
- Remodeling
- Production Studies
- Survey and Reports
- Materials Handling

Morton L. Pereira
and Associates
Engineers and Architects
100 West Monroe Bldg., Chicago 3, Ill.

"REGAL" MONOCORK
by
New England

This Press Blanket is by far superior to any cork packing that has ever been available to the industry!

We make this claim with no fear of contradiction. Its perfection is attested to by the fact that we have difficulty in keeping up with the demand.

No matter what your reason may be for not having these blankets on your machine, the simple truth is that you are denying yourself the best. Once you learn what "REGAL" has to offer, you too will be a constant repeat user.

YOU BE THE JUDGE!

NEW ENGLAND NEWSPAPER SUPPLY CO.

164 FREMONT STREET
WORCESTER MASSACHUSETTS
BRANCHES: New York—Chicago—San Francisco—Tulsa

"OH BOY!
Are Things Coming My Way!"

Why shouldn't he whistle? Three new customers in one trip around his route. No sampling. No asking. They just called to him and said, "We want to take Your Paper after this. The boy that carries the Other Paper is so irregular. You come around at the same time every day."... All to the good! Some day Sonny Boy will learn that His Paper relies on Certified Dry Mats right along, while the Other Paper will shop around for mats.

For dependable stereotyping, rely on Certified Mats
Certified DRY MATS
CERTIFIED DRY MAT CORPORATION, 9 Rockefeller Plaza, Dept. M, New York 20, N. Y.

THE
MONOMELT COMPANY

THE MONOMELT
THE PLANE-O-PLATE
THE HYDRO-CASTER
MONOMELT POWER SHEARS
MONOMELT MOLDING PRESSES
PLASTIC PLATE CURVER
VINYLITE AND ELECTROTYPERS SUPPLIES
BAKELITE MATRIX
(Processed by Monomelt)

1611 N. E. Polk St.
Minneapolis, Minn.

Hoch's Equipment Observations

SPEAKING on the subject of *Printing Equipment Needs* before Brooklyn Printers Group, November 21, Fred W. Hoch, President of Fred W. Hoch Associates, Inc., stressed the necessity on the part of a printer of knowing not only what his equipment will turn out, but what competitors' equipment will do so that he can maintain a sound competitive position.

"The successful men I have known in the industry have run their presses at maximum capacity, but they do so only because they know that their profits will enable them to replace the equipment," Mr. Hoch stated after expressing his conviction that installation of new major equipment such as presses, typesetting machines, and folders, hardly ever is justified unless it can be operated for at least two shifts.

With equipment being operated profitably on two shifts, if the capacity of the plant still is not sufficient to handle work on hand or in sure prospect, don't rush to buy equipment, but farm out the extra work. Under this plan, there will be time for careful analysis.

If it is decided finally that new equipment is needed—and thorough check of the firm's financial status shows that it can be paid for without imposing an intolerable strain on the budget—it should be purchased only under a very specific written contract that will clearly state methods of payment and will provide for all contingencies. A proper contract, for instance, should provide for printer taking title only after a new unit is installed and is operating in line with the manufacturer's claims.

Other factors connected with purchase of equipment should include consideration of the weight load that the floor will accommodate; how equipment will be brought into building; where new unit will be placed, and whether it will necessitate costly rearrangement of other units.

In connection with his statement that purchase of new major equipment is justified in most cases only when it can be operated for at least two shifts, and its cost written off in two or three years, Mr. Hoch pointed out the advantage of specialization in product to keep equipment rolling consistently and with the minimum of production peaks and valleys. He cited the forms specialist with much of his work on a long contract basis whereby he supplies all of a customer's forms needs for a year at a time. Where a specialist printer—of forms, stationery, or other products has developed his market to the point where he can successfully make combination runs, he has a further assurance of consistent and profitable production.

Keep closely in touch with new developments in other processes and in the so-called "fringe" processes, Mr. Hoch advised. But whatever process or combination of processes a plant is equipped to handle, its management should keep in mind at all times that, regardless of rush or other adverse conditions, quality of product should never be allowed to fall below high minimum standards.

Celebrates 60th Year

The Sinclair and Valentine Co. held banquets on November 29 in 33 cities throughout the United States, five cities in Canada and one in Mexico to celebrate the Sixtieth Anniversary of its founding. The main office, factories and laboratories are at Broadway and 129th St., New York, N. Y. A basic materials factory is located in Ridgway, Pa., and regional plants are operated in the other 31 cities in this Country. Subsidiary Company Plants are operated in Canada and Mexico.

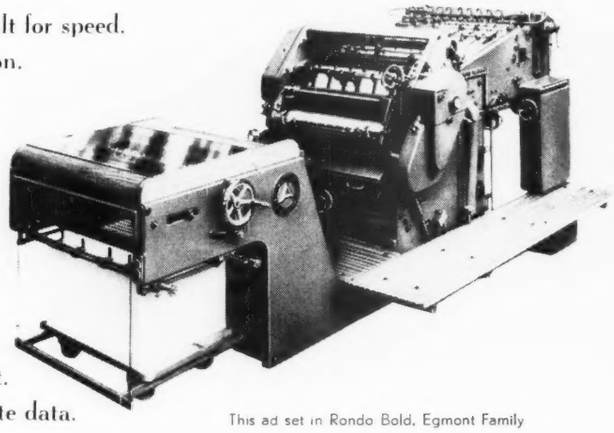
The Company was formed in 1890 by Francis MacDonald Sinclair and Theodore S. Valentine. From a modest beginning in a one-room factory in lower New York it has become a large industrial organization. In addition to manufacturing and distributing inks for all printing processes and chemicals and supplies for the lithographic industry to every Graphic Arts center throughout the world, the company also manufactures basic raw materials such as dry and flushed colors, varnishes, synthetic resins, compounds, etc. for use in its end products and for marketing.

Mrs. Francis MacD. Sinclair, widow of the founder, was hostess to all of the banquets. She was present at the New York affair which was held in the McAlpin Hotel. Anthony J. Math, President, was toastmaster.

AC

answers the quality printer's demand for rich-toned reproduction with Frankenthal Palatia Sheet-fed Gravure Presses

Superbly built for speed.
exactitude, unusual simplicity of operation.
Unequalled for single tone
and multicolor reproduction.
Both continuous surface sleeve and plate models.
Exclusive patented features,
as: pre-gripper-swinging-lay
for absolute register at all speeds;
test tray for checking sheets
while press is running.
Meticulous precision-craftsmanship throughout.
Write for complete data.



This ad set in Rondo Bold, Egmont Family

Amsterdam Continental
Types and Graphic Equipment Inc.

268-276 Fourth Avenue, New York 10, N. Y.

UP Output.... CUT Costs.... and "WIN the Peace"

CALLING...ALL OLD MODELS
Calling *In* All Old Models

Calling the 13,000 owners of old model BAUMFOLDERS (purchased prior to 1940) . . . to exchange them for the modern models . . . from the amazing NEW "Junior Jets" (14x20 and 17x22) to the most versatile Folder ever designed . . . (15 folding sections . . . more than any other Folder ever built) . . . 30x46 . . . 60 . . . BAUMFOLDER.

Of course, your old Model BAUMFOLDER is undoubtedly giving you good folding and isn't worn out . . . BUT, to cut operating costs to the bone . . . to increase folding profits to the "tree-tops", investigate the greater production, greater versatility and latest time-saving features of the MODERN MODELS.

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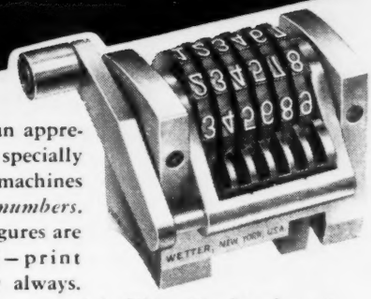

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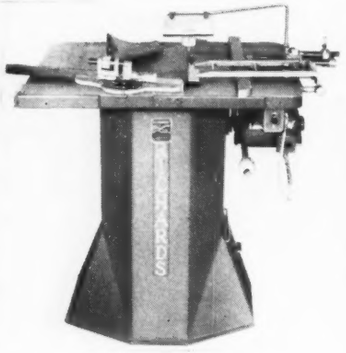

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Negative Materials Bulletin

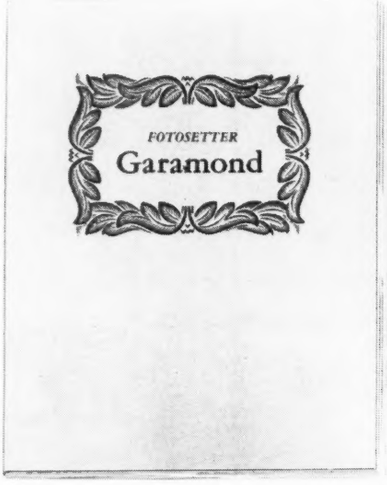
FEATURES and characteristics of Transaloid Transparent Negative Paper, Lithaloid Film and Lithaloid Negative Paper are discussed in a 12 page bulletin issued by the Haloid Co. A reference list of negative materials, available sizes in cut sheets and rolls, Haloid Formulae Developers, and processing instructions for Transaloid and Lithaloid film and Lithaloid negative paper are included in the two color bulletin. Copies are available upon request.

Floormaster Trucks

STANDARD and special models in two-wheel and four-wheel truck design are shown by Lewis-Shepard Products, Inc., in a recently issued 12 page bulletin. The two color bulletin includes illustrations, descriptions and specifications of the Floormaster industrial trucks. One page is devoted to construction features of Floormaster trucks and the eight different rack types available. Included also are descriptions of our different floor-protective wheels available, semi-live skids, and various designs of dollies.

Bernhard Booklet

LUCIAN Bernhard, type designer, tells how to use Bernhard Modern, Bernhard Modern Bold and Bernhard Tango in a new 12 page booklet published by American Type Founders. ATF is mailing the booklet, accompanied by three four-page specimen sheets, to printers, typographers, advertising agencies, artists, type specifiers and those who work with type reproduction. Others interested will be supplied on request. The new Bernhard Style Book is a departure from the standard form of type sampling. Mr. Bernhard was allowed a free hand in its design, and it is a reflection of the artist's sense of rhythm and balance, his taste in typography and his personal style of humor.



Fotosetter Garamond Booklet—Forty-four different specimens of the Garamond family, designed for use on the Fotosetter photographic line-composing machine, are presented in a 24 page booklet by Intertype Corporation. Included in the booklet, the cover of which is pictured above, are roman, italic, light and bold faces, from 6 to 36 pts. For each type face design only two sizes of Fotofonts, the Fotosetter matrices, were used to produce the 11 sizes illustrated in the booklet.

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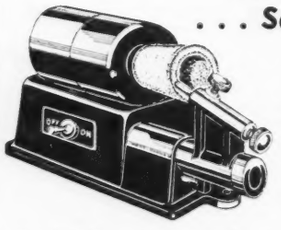
Office Copying Machine

AN office copying machine, named the BW Copyflex and introduced by Charles Bruning Co., Inc., is designed for making direct positive copies of layouts, order forms, communications, etc. In making copies, the machine employs the BW Diazo process which is based on paper coated with an aniline dye. Within the machine this dye coating is bleached by actinic light rays, except where the record or document to be copied has markings, such as typing, printing or line drawing. These markings prevent light from bleaching the dye and a sharp, clean, black line is formed, reproducing the markings on the original, states sponsor.

The NOLAN Router Bit Sharpener Cuts Routing Costs . . . Saves You Money



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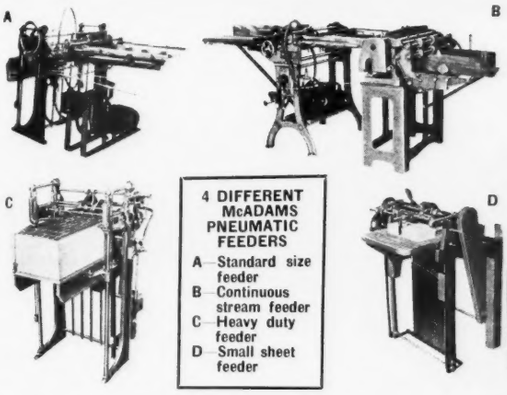

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Illustration B—Continuous stream feeder is adaptable for perforating and gluing machines.

Illustration C—Heavy duty feeder is adaptable for printing presses, playing card, calendering, and embossing machines.

Illustration D—Small sheet feeder—new style—is adaptable for check imprinting and rotogravure presses and multigraph machines.

Write for Feeder Information P-1.

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- Pen Ruling Machines
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- Pile Feeders
- Roll Feeders
- Ruling Inks
- Ruling Pens
- Bookbinders Tools

The BW Copyflex will handle any size of original copy up to 11½ in. wide by any length. Machine is installed by connecting to a 60 cy., 110 v., a.c. line. Measurements are 29½ in. by 28 in. by 50 in. high. Sponsor states that both sides of an original can be copied.

Pre-Press Catalog

VANDERCOOK Pre-Press Equipment is illustrated and described in a 24 page catalog issued by Vandercook & Sons, Inc. Equipment displayed in the two color catalog includes hand proof presses, power offset proof press, engravers proof press, high speed four color proof press, safe electric galley proof press, test presses, page makeup gauge, plate gauges, test blocks and slug gauge. Descriptions of each equipment item includes a listing of standard and optional equipment and specifications. A page each is devoted to the Vandercook 68 Makeup Gauge and the Vandercook 23 Safe Electric Galley Proof Press, containing illustrations of this equipment in operation.

BBD Aniline Inks

BBD Excellopake Aniline Inks have been developed for use on either cellophane, foil or other specialty stocks, according to Bensing Bros. and Deeney. Designated the 400 Series, sponsor states the opaque, 100 percent pigmented ink adheres strongly to all the stocks for which it is designed.

It is also claimed that fast drying qualities prevent fill-in or offset when run at press speeds up to 475 f.p.m. Other claims made for the ink are its ability to redissolve itself in each turn of the cylinders, high color strength is preserved because it does not precipitate even when diluted, and remains stable in storage. Also, the 400 Series ink is said to be non-blocking at temperatures up to 130 deg. F., either ink-to-ink or ink-to-stock; and non-bleeding in water, wax, grease and overprint varnishes.

The Excellopake Ink is available in all standard colors as well as in special shades to match user's specifications.

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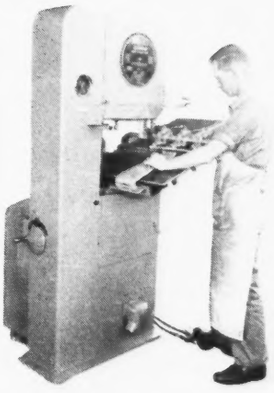
faster, better



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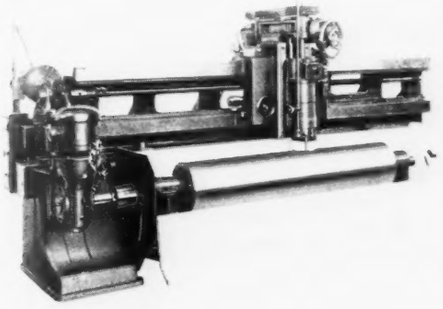

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Manufactured in two sizes, each being able to handle varying diameters and lengths of cylinders. Special Intaglio stones, using a combined concentric and eccentric motion give a smoother surface in shorter time than obtained with other machines. Water as a coolant eliminates all dust. Precision automatic feed—either continual or at end of each traverse—compensates for stone wear while grinding. When polishing cylinders, stone is "floated" with continuous adjustable pressure, resulting in a higher finish than obtained with paper. Variable speed motors permit a choice of grinding and polishing speeds.

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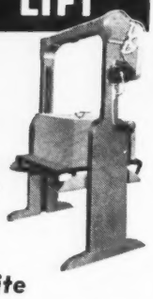
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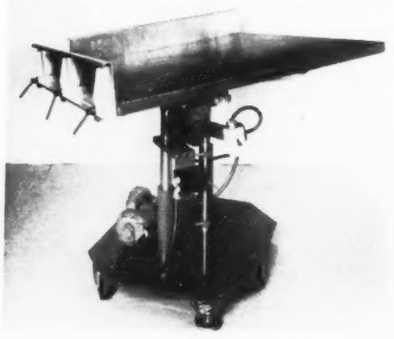
Production and Mechanical Executives are invited to submit to the editor informally in a letter devices which have helped production in their plants.

Large Sheet Jogger

THE Brackett Large Sheet Jogger is supplied with a 48 in. by 48 in. table and a power lift. Manufacturer states this machine was designed especially to solve the problem of large sheet jogging.



The jogger is mounted on fold-away casters for moving about the shop. In use, the Jogger is set down solidly on the floor, or can be raised by hand-lever. The lowered Jogger handles approx. 1 thousand sheets; elevates them to cutting bed height for sliding directly to the cutter table without extra hand jogging. A larger table top is available. Table can be tilted to any angle. Jogger operation is controlled by conventional switch. A ball bearing motor of $\frac{1}{4}$ h.p. is mounted on the frame to drive the jogging mechanism.

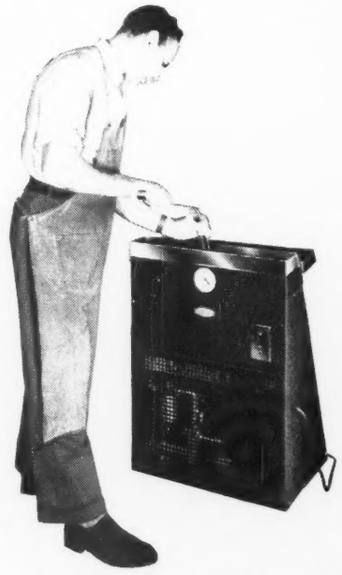
Cold Top Developing Tank

THE General Plate Makers Supply Co. announces a Cold Top Developing Tank which, it is claimed, will maintain a crystal clear solution at all times without changing developer.

In the tank is a circulating pump that forces used developing solution up through a filter to remove dirt, slag and other foreign particles. The cleaned solution is then returned to the main tank at the rate of 1 gal. per min.

Constant temperature of the developing solution is maintained by a thermostatically-controlled immersion heater. The temperature can be maintained — + 1 deg. up to 140 deg. F. The screened and replaceable filter, states sponsor, needs changing every three to four months.

The cold-rolled steel developing tank operates off any 110 v. receptacle. The capacity of the tank is 9 gal. of developing solution. It is 32 in. high, 23 in. wide, with a 16 in. base that tapering upwardly from the base. Outside is baked wrinkle finish. The inside tank is stainless steel.



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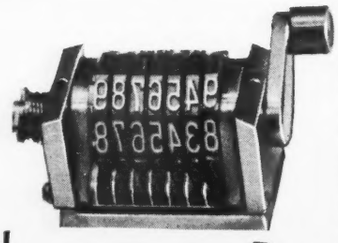
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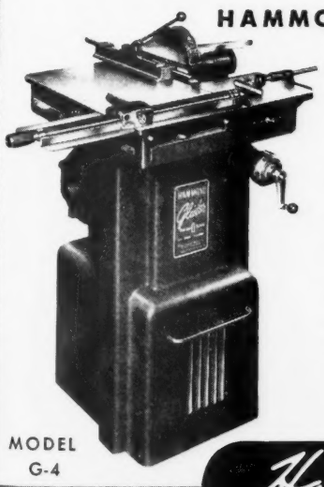

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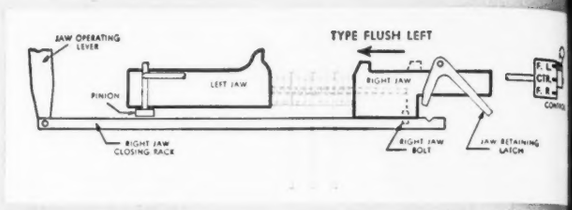

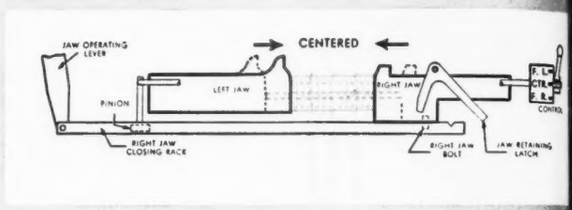

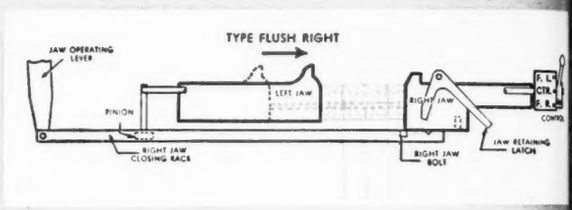

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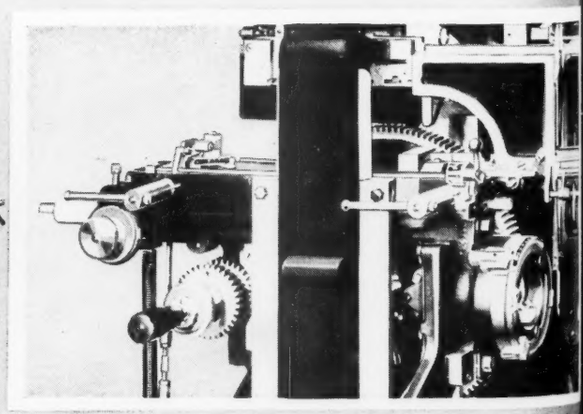

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